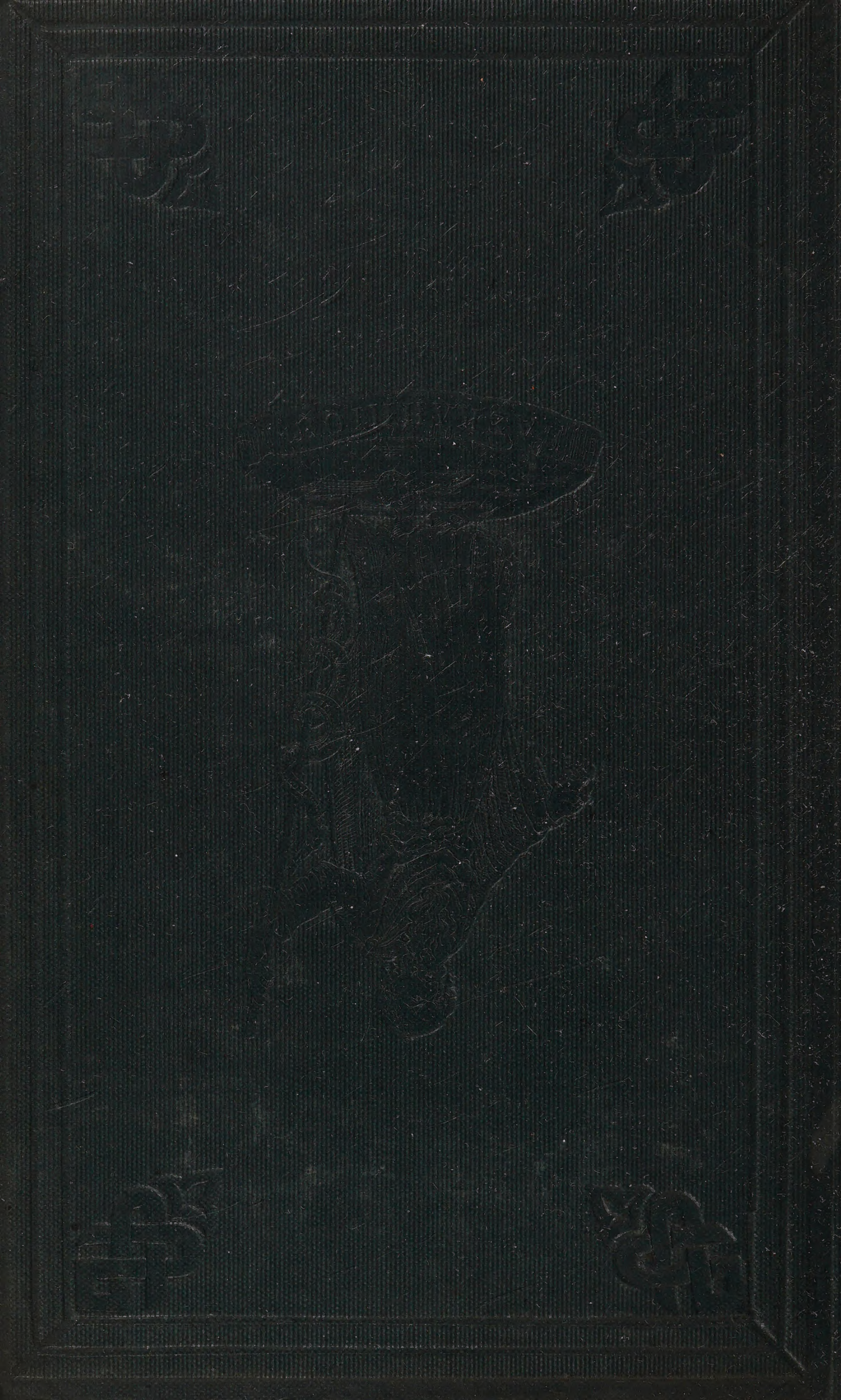

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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JULY—DECEMBER,

1859.

PRINTED BY J. E. ADLARD, BARTHOLOMEW CLOSE.

THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS:

TOGETHER WITH A

SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

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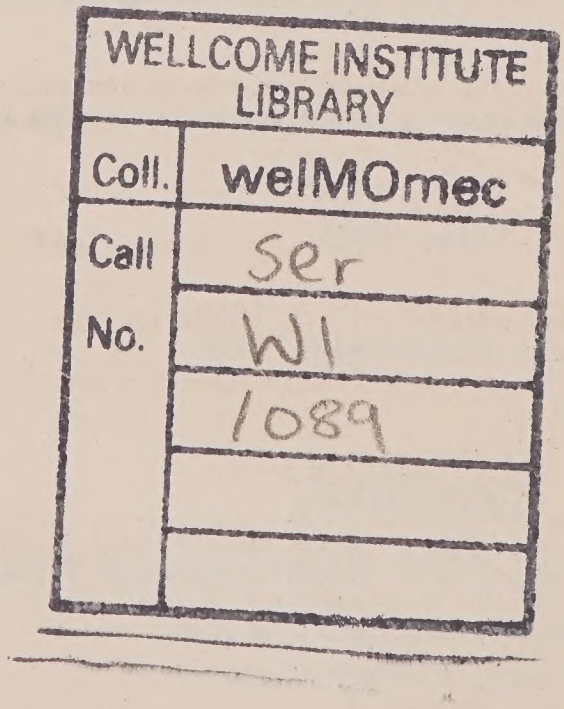

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Association Medical Journal.
British and Foreign Medico-Chirurgical Review.
Dublin Quarterly Journal of the Medical Sciences.
Dublin Medical Press.
Dublin Hospital Gazette.
Edinburgh Medical Journal.
Edinburgh New Philosophical Journal.
Glasgow Medical Journal.
Indian Annals of Medical Science.
Journal of Psychological Medicine.
Lancet.
Liverpool Medico-Chirurgical Journal.
London Medical Examiner.
Medical Circular.
Medical Times and Gazette.
Microscopical Journal.
Pharmaceutical Journal.
Statistical Journal.

AMERICAN.

American Journal of the Medical Sciences.
American Monthly Journal.
Canada Medical Journal.
Charleston Medical Journal and Review.
Montreal Monthly Journal.
New York Journal of Medicine.
North American Medico-Chirurgical Review.
North-Western Medical Journal.
Philadelphia Medical Examiner.

FRENCH.

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,, Medico-Psychologique.
,, d'Oculistique.
,, des Sciences Naturelles.
Archives Générales de Médecine.
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Gazette Hebdomadaire de Médecine et de Chirurgie.
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Monatsbericht der Akademie zu Berlin.
Müller's Archiv für Anatomie, &c.
Schmidt's Jahrbücher.
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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

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PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) HYGIENE.

ART. 1.—*The estimation of the Organic Matter of the Air.*
By Dr. ROBERT ANGUS SMITH.

(*Medical Times and Gazette*, May 28, 1859.)

AFTER referring to the opinions concerning organic matter in the air, and the various attempts made to estimate the amount, Dr. Smith describes a method of obtaining the relative quantity by means of mineral chameleon or permanganate of potash or soda. This mineral, originally proposed by Forchammer as a means of estimating the organic matter in water, is now found to be capable of detecting the more minute quantities of organic matter present in air. At first the air was passed through the solution of chameleon, but this was not found to cause complete action. It was necessary that the air should remain for some time in contact with the solution to be decomposed. It was then ascertained that the relative amount of organic and other oxidizable matter in air could be found by a simple metrical experiment in a few minutes. Dr. Smith then says: "In working out this idea, it has been found that a vessel of the capacity of 80 to 100 cubic inches is the most convenient. This is equal to rather less than a quart and a half and rather more than a litre and a half. The solution of chameleon used must be extremely weak, so that small quantities cannot readily be

distinguished by daylight. 600 grains of it are required to decompose 5 grains of a standard solution of oxalic acid. The standard solution of oxalic acid is so made that 1000 grains neutralize one grain of carbonate of soda. A thousand grains contain, therefore, 1184 grains of crystalized oxalic acid. To prepare the solution a manganate was formed by heating nitrate and carbonate of soda and manganese, assisted by a little chlorate of potash. There was the most minute trace of nitrate remaining in the solution. Perhaps chlorate of potash would have been better, but I had no idea at the time of the difficulty afterwards found in obtaining the same quality. A solution of this manganate was made in pure water, and carbonic acid passed through until a reddish purple shade was obtained. It was then tested by oxalic acid, adding three or four drops of pure sulphuric acid. The purest water obtainable was added to dilute it to the proper amount. This often failed; and I have sometimes for a whole week failed to obtain the proper solution. Although I call it permanganate, it is not entirely so; it is a mixture of manganate and permanganate. A permanganate of the strength described has a dingy appearance and an uncertain colour. I do not doubt that a pure permanganate of a suitable strength may be obtained pleasant to work with. There is some difficulty in obtaining pure water for preparing the solution. If allowed to stand for some time with a manganate it becomes purified. The solution of chameleon is apt to change, although slowly, even when it is hermetically sealed in a glass tube. The solution described had become nearly colourless when sealed up hermetically for about three months. It is found readily to change when it is exposed to air by frequent removal of the stopper of the bottle containing it. Its strength must be tested occasionally; and if it differs from the standard, a calculation must be made for its reduction. The strength of the permanganate solution is extremely small. A few grains of the ordinary solutions of manganate used will make some thousand grains of the solution here employed. The reason of this lies in the extremely small amounts of organic matter found even in the worst air. The vessel used is simply a bottle, with a perforated stopper, through which pass two tubes. To one of these a stopcock is attached, to the other a clasp or stopcock. The standard size proposed is 100 cubic inches; and to this all the experiments have been reduced; the vessels actually used contain between 80 and 100 cubic inches of air. The stopcock is of glass, or of hard caoutchouc, which is still better. When the bottle is to be filled with the air to be tested, the stopper is removed, and the pipe of an exhausting pump is inserted, reaching to the bottom of the bottle. The pump is made like a cylindrical bellows, of about eight inches long when stretched out, and about four in diameter, and is compressible into the thickness of about two inches. The sides are made of thin Mackintosh cloth. By the use of the pump the air of the vessel is removed, and the external air of course enters. A few strokes of the pump are sufficient, *i. e.* from six to ten. After ten strokes I perceived no change, and am inclined to think that it is an unnecessary number. The test-liquid is poured into a graduated tube or burette, containing somewhat more than will be required. A portion is then poured into the tube which passes

through the stopper, and the stopcock is opened to allow it to pass. Small quantities are used; when it has entered the bottle, the liquid is made to spread over the sides, and time given it to be exposed to the action of the air; it is found that in five or six minutes a decided epoch is attained from which to date the comparative action. In order to see the colour the liquid must be allowed to trickle down the sides of the vessel, and collect itself at one point of the circumference at either end of the cylindrical part of the bottle. This part must be raised up to the level of the eye, so that the longest axis may be presented to the sight, and thereby the deepest shade of colour. It requires some time to accustom oneself to the sight of such a small amount of colour; but when it is once well observed, it will be found to be a method which will admit of the greatest precision. The first few drops which are poured in will probably be decolorised at once; a few drops more must then be added; if they become decolorised, a few more must be used; and so on until there is a perceptible amount of colour remaining. When this occurs, the experiment is concluded. The amount of the reagent used is then read off from the graduated measure. If the liquid be of the proper strength, and the bottle the required size, the number of grains gives the comparative quantity at once. Sometimes the amount of organic matter is so small that there is no appreciable action, or even the smallest amount of solution by one vessel of air. In this case it is necessary to fill the bottle several times. The mode of doing this is apparently extremely rude, but the results are such as not to demand a finer method at present. A finer method, of course, would need little ingenuity to contrive. At present I merely remove the stopper and fill again with air as before. During the period of filling the vessel the surface of the liquid is reduced to the smallest amount, and the change it undergoes is either inappreciable, or so constant as not to affect the results. In analysing the air, in this manner, it is found that a decided result is attained in about five minutes. Sometimes the result is decided in one; that is, there is a termination to the rapid action. This peculiarity is probably to be explained by the following experiments. If we pour decomposing matter on the permanganate solution, it is rapidly destroyed. If the matter be not in a state of decomposition the action is much slower. These different results promise a mode of dividing the organic matter of the air into classes according to its quality. These facts are mentioned merely as germs of a future inquiry. In large towns where coals, containing much sulphur, are burnt, the sulphurous acid takes the oxygen of the chameleon, and an apparently large amount of organic matter results. This sulphurous acid is of itself an impurity, perhaps as hurtful as some kinds of organic matter. We measure by this means the amount of oxygen needful for the oxidizable matter of the atmosphere, and all such matter is impurity, in some places entirely organic, in others, such as towns, mixed with inorganic gasses. Some of the principal results obtained by this method were as follows:

*Relative Quantities of Organic and other Oxidizable Matter in the Air of**

Manchester (average of 131 experiments)	52·9
,, All Saints, E. wind (37 experiments)	52·4
,, ,, W. wind, less smoky (33 experiments)	49·1
,, ,, E. wind, above 70° Fahr. (16 experiments)	58·4
,, ,, below ,, (21 experiments)	48·0
,, In a house kept rather close	60·7
In a pigstie uncovered	109·7
Thames at City, no odour perceived after the warmest weather of 1858	58·4
Thames at Lambeth	43·2
,, Waterloo Bridge	43·2
London in warm weather (6 experiments)	29·2
,, after a thunderstorm	12·3
In the fields S. of Manchester	13·7
,, N. of Highgate, wind from London	12·3
Fields during warm weather in N. Italy	6·6
Moist fields near Milan	18·1
Open sea, calm (German Ocean, 60 miles from Yarmouth)	3·3
Hospice of St. Bernard, in a fog	2·8
N. Lancashire	about same
Forest at Chamouni	2·8
Lake Lucerne	1·4

The first experiments undertaken were in Manchester, and the average amount obtained was about 50, gradually diminishing in moving towards the country, until it was found in the fields at 13; on passing a sewer stream about a mile from the outskirts, the amount rose to 83. The atmosphere on the Thames was not measured while at its worst, but immediately afterwards, when, however, it had ceased to affect the senses of most persons at least, the amount was very high, viz. 58. I was anxious to know how far the Thames affected the atmosphere of London, and tried some experiments: the result was that the influence appeared to cease almost immediately; the fact of a block of houses standing in the way was enough to prevent the influence; when at the worst this may not have been the case; to arrive at the other side of the block, the vapour would generally require to rise high, so that it would become mixed with a great deal of air. The amount obtained in a few trials in the streets of London was 22 to 34; going on to Highgate, the number sank from 33 to 24; on descending the north side of Highgate Hill a distinct change was perceived, the numbers being 18; the wind meantime was blowing from the city; the few experiments made in the fields in summer gave 10 to 12. The numbers 6 to 18 were obtained in Switzerland and Lombardy. The moist fields round Milan gave 18; when the water passes off the rice fields, producing the unhealthy season, I do not doubt that the amount will be much higher. It was not convenient for me to stay, nor to go

* A few of these results were published in the 'Athenæum' during last summer. The present numbers are somewhat higher, being reduced, for the sake of uniformity, to correspond to a vessel of 100 cubic inches.

further to places distinctly infected with malaria. I was desirous of trying it in some of the hovels of the Vallois and the Val d'Aosta; but the weather being fine, and the people living much out of doors, the inquiry was not encouraging. The few experiments made did not give very striking results, whereas the lower parts of our own towns gave results most decided; I imagine the cause of this to be that a drier air does not allow the offensive matter to rise so steadily. This fact has many ramifications, but it will explain several difficulties in our sanitary science. It is with the assistance of moisture that the organic matter is conveyed into the air. Moisture itself, as may be supposed, does not produce any action on the test; one of the lowest numbers obtained was on the German Ocean, about sixty miles from land; the day was calm and clear. In the Straits of Dover, when the wind was blowing briskly from the German Sea, the amount obtained was very high; but as there was a slight spray the experiments were disregarded. About 8000 feet high on the Alps, a dense fog showed also one of the smallest amounts obtained; the ground was entirely bare rock, and could not give out organic matter. The amount was 2·8. The influence of height was very decided; in the higher grounds of Lancashire, near Preston, the numbers being from 2 to 4. A wind blowing down from the Mer-de-Glace gave rather more than at a lower point, although coming down the hill; a dry pine forest in the neighbourhood, although very fragrant, did not appear to raise the number. The influence of the sea and of height seem equally decided; a few hasty experiments made in the hothouses at Kew led me to believe that there was less increase there than might have been expected, the amount obtained being less than in London, but more than outside the houses, where it was cooler. At the same time weeks or months should be given, when only hours were allowed for the experiments. The influence of heat appears to me to increase the amount, when there is moisture present. The influence of dryness seems to be towards diminishing the amount. The influence of great cold has not been tried yet. The influence of rain in hot weather, to some extent of course a cooling influence, but chiefly a means of washing the air, seems most decided. After a thunderstorm and shower at Camden Square, the number, which was previously 31, fell to 12. The influence of our towns, especially our smoky towns, is most decided also; it is easy to tell by this test, when in the outskirts of a town, whether the wind is blowing from the town or the country. A distinct difference was always found between the front and back of Manchester houses; a similar difference obtained when a room had been inhabited for some time, and the difference was of course very marked when the smell of a sewer came into the house. I had a good opportunity of observing this in my laboratory last year. It must be remembered that the numbers given for some places were obtained on one day of the year only, and we must be careful not to draw too many conclusions; we have yet to learn what kind of organic matter is wholesome and what is unwholesome. I believe that this is the next great point to be attended to; at present we are only becoming able to ascertain the gross amount. 'I feel this caution to be needful, lest the numbers should be used to prove too much. At an early

opportunity all the experiments made will be published; but we may already see the range of the action of this test to be so great as to make it promise to be of some practical as well as scientific value. Dr. Southwood Smith has observed that the facts on which sanitary economy is built are exceedingly difficult of comprehension by a large number of people, because the cause of the evil cannot be brought directly under observation; if, however, any plan were invented of showing that these dreaded emanations existed even when the senses could not perceive them, belief would be easily gained, and the requisite carefulness would then take place. If the method explained be found to be no more valuable than this, it will at least not be reckoned among useless discoveries. We may hope, however, that it will be found to prove not only that much of that which we have already known is true, but that many other now hidden things are true also; we may find that every wind will have attached to it its mark of unwholesomeness with respect to this test, and that every season also will have its coefficient. It may also be found that changes of season or of condition of the air will be ascertained with much more certainty, delicacy, and rapidity than now. We may even hope to find some premonitory symptoms of disease in the atmosphere before it affects the human body; the exciting cause itself existing long before it has been able to take effect, so that useful precautions may be made in time, and an efficient defence prepared. At the same time no proof whatever has yet been given that a plague or any infectious disease can be estimated by it, although reason has been given for such an expectation, while the air over different fields differs enough to promise some knowledge of miasm. But what is abundantly established and made clear to the eye is that the air of our large cities is sufficiently impure to account for much of their unhealthiness, and the air of our hills and seas and lakes sufficiently pure to account for its salubrity. It is to be hoped that greater consequences will follow in proper time; although this itself was needed to set at rest some questions which have cooled the enthusiasm of many in the cause of sanitary reform."

Art. 3.—*On Prison Dietary.* By Dr. Edward Smith, Assistant-Physician to the Hospital for Consumption at Brompton.

(*Dublin Quarterly Journal of Medicine*, May, 1859.)

In the English gaols, there is a different dietary for county prisoners and for convicts, the latter being usually much in excess of the former. The government has provided a scheme for county prisoners, but has not compelled the magistrates to adopt it; so that, in one half of these gaols, there is still no uniform scheme of dietary. The author's attention has been chiefly directed to the government scheme, and he considers it to be based upon wrong principles, and unjust in its details. Increase of food with duration of imprisonment is unnecessary, provided the prisoners are supplied with sufficient food from the commencement. Variation in the quantity of nutriment from day to day (the conditions being unchanged) is absurd; and the

allowance of one pint of soup per week, as a distinction between no labour and hard labour, is manifestly ridiculous.

The chief defects in the existing scheme are, the deficiency of food in short, and excess of food in long imprisonments; and the apportionment of one, and that an insufficient, amount of food to all kinds of hard labour. It is upon these two points that Dr. Smith has prosecuted a series of experiments.

In the existing scheme, the amount of food supplied varies through five classes from one pound of bread and four ounces of oatmeal daily for the shortest sentences, to twenty-two ounces of bread and one pound of potatoes daily, four ounces of oatmeal four times and two ounces thrice per week, a pint of cocoa thrice per week, with four ounces of cooked meat without bone four times, and three ounces thrice per week, in the sentences of four months and upwards.

Dr. Smith adopts the dictum of Sir James Graham, in his letter of instructions to the Commissioners, that the dietary shall not be made an instrument of punishment; and proceeds to state what is the true amount of food required under different circumstances. He discards the basis of duration of imprisonment, and adopts that of the degree of labour enforced. He suggests that four classes should be established—1. For all cases without labour; 2. Those with light labour, as in ordinary manufactures and trades; 3. In the heavy manufactures, as weaving wide widths of cocoa-matting, and with the use of the lighter cranks and shot-drill; and 4. With the full pressure of the crank and the treadwheel labour.

In the first classes, he has found, as the result of eight experiments, that eight ounces of carbon and two hundred grains of nitrogen are lost by the system daily (he has not yet determined the amount of hydrogen consumed); and that, in the other classes, the addition is one fifth, three fifths, and four fifths of that quantity, respectively. From this he has deduced the amount of food which must be supplied to meet this waste; and, taking bread and cheese as offering a good basis for comparison, the quantities required in the four classes are as follows:

1. In rest, twenty-three ounces of bread and two ounces and a quarter of cheese.

2. With light trades, twenty-seven ounces and a half of bread and three ounces of cheese.

3. With heavy trades and light crank labour, thirty-six ounces and three-quarters of bread and four ounces of cheese.

4. With full treadwheel and crank labour, forty-one ounces and a half of bread and four ounces and a half of cheese.

On this plan, a dietary is provided which meets the wants of each man separately, and which is adapted to every prison, notwithstanding the extraordinary diversity which, in a former paper, printed in the *Transactions of the Association for the Promotion of Social Science*, and in the *Philanthropist*, 1858, he has proved to exist in prison discipline.

Dr. Smith states the proportion which other ordinary articles of food bear to bread and cheese, so as to enable any one to vary the kind of food, and yet retain the due proportion of nutritive elements.

This is given in the following table, chiefly compiled from Playfair's data, which show the proportion of carbon contained in various articles of food, as compared with that in ten parts of bread, the quantity of nitrogen contained in each ounce avoirdupois, and the cost per pound at contract prices.

	Parts of various substances equal in carbon to 10 parts of fresh bread.	Nitrogen in each oz. — Grains.	Cost per lb. October, 1858. — s. d.
Bread		5¾	1 ½
Wheat flour . .	8	7¾	1¼
Peas	8	15¾	1½
Rice	8	4⅛	1½
Oatmeal . . .	7½	8¾	1½
Scotch barley . .	—	—	1⅝
Molasses . . .	—	—	2
Meat (fresh) . .	10	8¾	4½
Cocoa	5	8¾	1 1½
Potato	⅓	1½	¾
Suet or butter . .	4½	—	
Sugar	7½	—	4½
Indian corn . .	7½	7¾	
Cheese	8	19½	6

This table is equally applicable to workhouse dietary.

Dr. Smith then describes the influence of certain modifying circumstances, determined in part by his own labours, and in part by the observations of Mr. Milner, surgeon to the Wakefield County Gaol, given in a paper read before the British Association, and published in the *Sanitary Review*. These are, age, sex, size, season, conformation, and employment. Mr. Milner has shown, in reference to age, that a dietary better than that of the highest class in county prisons was excessive in old age, whilst it was insufficient to maintain the due growth of the body at the age of seventeen. Persons of unusual height, and of a girth of thirty-four inches and upwards, lost weight in a rapidly increasing ratio. The duration of imprisonment had no marked influence. In reference to the waste of carbon by the tread-wheel labour, Dr. Smith has proved that, with a quarter of an hour's work, the increase over that of the state of rest was more than five times; and, with alternations of work and rest during seven hours and a half, it was three times.

In reference to seasons, Dr. Smith has proved that the system is at its lowest state of vital action at the end of summer; and Mr. Milner has shown that his prisoners gain weight from May to September, and lose during the other months.

The general regulations recommended by the author, are as follows:

1. The supply of food must meet the wants of the system.
2. Variations in quantity of nutriment with duration of imprison-

ment, and from day to day, are unnecessary; provided the quantity at first supplied be suited to the wants of the system.

3. Growing persons must have a sufficient excess of food to maintain the development of the system, whilst to old persons less food may be supplied. Persons of unusual size demand an increased supply of food.

4. From December to April, both inclusive, the quantity of food should be one sixth greater than during the other months.

5. The supply must vary day by day with the labour exacted. The breakfast should be as good a meal as the dinner, and especially with hard labour; and the treadwheel should not be worked before breakfast.

6. With hard labour, the meals should not be too bulky, so as to impede respiration.

7. Other things being equal, the cheapest articles should be preferred; and hence potato should be supplied more sparingly, and peas more plentifully. Dr. Smith commends the use of unsifted flour, ground and made into bread, under efficient superintendence, in the prison.

Art. 3.—*The salutary effects of Sun-flowers in marshy localities.* By Lieutenant Maury.

(*Courier des Etats-Univs.*, No. 20, 1859; and *Gaz. Heb.*, July 22d, 1859.)

The neighbourhood of the Observatory of Washington presents all the conditions most suitable to the production of the worst forms of malarious fevers. The observatory itself is a very unhealthy place of residence, being but little raised above the water of the neighbouring river. It is, indeed, in the midst of a district which is no better than a swamp. Noticing that the malarious fevers made their appearance at the time when the marsh vegetation passes into a state of decay, Lieutenant Maury proposed to supply the place of this vegetation by plants which will be in flower at this time, and which will have the effect of absorbing and appropriating the noxious emanations. For this purpose he chose sun-flowers, the remarkable power of which, in absorbing water, is well known. He had a wide district around the observatory plentifully sowed with the seeds of this plant. In due time, the month of August came round—the unhealthy season *par excellence*—the seeds had issued in a plentiful crop of plants, and *the fevers,* which had appeared regularly ever since the foundation of the observatory, *did not make their appearance.*

Art. 4.—*On the action of Hard Water upon Lead.* Dr. Lander Lindsay.

(*Edinburgh New Philos. Journal,* April, 1859.)

It is, and has long been, currently believed—1. That where there is free access of atmospheric air, pure or soft waters—that is waters absolutely or comparatively free from saline ingredients, readily cor-

rode lead and become impregnated—sometimes to a poisonous degree, with some of the salts thereof. 2. That the rapidity and extent of this solvent or corrosive action are proportionate to the purity of the water—that is, its freedom from neutral salts. 3. That impure or hard waters, that is waters containing a considerable amount of neutral salts, do not so affect, or become impregnated with, lead. 4. That such waters are prevented from acting on lead by, or in virtue of, their saline constituents, which exert a sort of protective or preservative power in regard to the lead. 5. That, if a given water does not, within a short period, cause a white coating on freshly burnished lead plates or rods, it may be regarded as destitute of any corrosive action, and may therefore be safely allowed to be kept in leaden cisterns, and transmitted through leaden pipes.

Observation, experiment, and inquiry have led Dr. Lindsay to the following somewhat opposite conclusions: 1. That certain pure or soft waters *do not* act upon lead. 2. That certain impure or hard waters, in some cases containing abundance of the very salts, which are generally regarded as most protective or preservative, *do act* upon lead.

In reference to the first proposition, that certain comparatively pure, or what are usually considered soft, waters, *do not* act on lead, it may be mentioned that Professor Christison found rain water collected on his own house in Edinburgh to be devoid of any corrosive action—a circumstance which he attributes to the presence of alkaline sulphates and chlorides. Again, Professors Graham, Hoffman, and Miller, who some time ago conducted a Government investigation into the action of waters on lead, with a view to discover "whether any comparative inconvenience would arise from a supply of soft water to the metropolis," contrary to what might have been expected, assert that, "with one exception, neither the soft waters of the Surrey Hills, which have a hardness of only two degrees, nor spring water artificially softened to three degrees of hardness, have any perceptible action on lead. The idea that soft waters invariably act upon lead seems to have its origin in the fact that certain specimens of distilled water, placed in contact with a large surface of bright sheet lead, dissolve as much as six or eight grains of the metal to the gallon." Dr. Medlock asserts that "perfectly neutral and pure" distilled water, from which nitrate of ammonia has been expelled, has no action upon lead; for, in a gallon of this water, allowed to remain in contact with 560 square inches of lead for forty-eight hours, no trace of lead could be discovered.

The second proposition may be illustrated more easily and fully. The illustrations which have presented themselves to Dr. Lindsay's notice have been chiefly of the two following kinds: 1. Corrosion, or erosion, to such an extent as to cause leakage of cisterns by waters of various degrees and kinds of hardness, or containing various kinds and amounts of neutral salts. 2. The poisonous action of hard or hardish waters impregnated with lead on the human body.

"It is needless to multiply instances: two or three must here suffice; but they will probably serve to recall to the memory of many of my readers parallel illustrations. My attention was specially called to the erosion of lead cisterns by spring or well waters about two

years ago, by my being requested to examine some cisterns, the bottom lining of which had been repeatedly eroded to the extent of causing leakage, and which had been as repeatedly repaired. These cisterns contained the water supply of a large public Institution of which I am the physician. The Institution is supplied with water from three different sources, viz.—1. Rain water from the roof; 2. Spring water; and 3. Surface water. With the first I have here nothing to do: it is in reference to the second especially, and also subordinately to the third, that my remarks apply. The spring water is from a deep well on the northern declivity of Kinnoull Hill, penetrating the Old Red Sandstone near where the trap protrudes through it. The water rises in the well to the height of twenty-eight feet. It is good, hard, drinking water, and is used in the Institution for drinking, as well as for culinary purposes. The surface water is chiefly rain water, which percolates through the soil, and is collected in a large tank holding 95,156 gallons. This water is used chiefly for baths, water-closets, and general cleansing processes. The cisterns have no covers; they are contained in the attics of the building, but are not exposed directly to the external air. My attention was first directed to the cistern containing the spring water. I found the leaden bottom of this cistern scooped out here and there into a series of cavities or holes, some of which were minute perforations, allowing of an escape of the water. Moreover, the bottom was covered by a pretty thick layer or coating of a heavy cream-yellow, putty-like matter, which also filled the cavities or holes above referred to. The cistern was comparatively new. I was told it had been repeatedly thus eroded, and as frequently repaired. But it would appear that the mode of repair had been mere soldering; and this, it is of great importance to bear in mind, inasmuch as I believe this mode of repair to have been the cause of the subsequent more rapid erosion. It has now been abundantly proved that galvanic action occurs in a leaden cistern holding water at the point of contact of the lead with other metals, whether these be in the form of solder or of iron bars, &c.; that this galvanic action is extremely favorable to corrosion; and that it is greatest in waters containing saline matters,—that is, precisely in circumstances in which, were there no galvanic action, the corrosive effect of the water would be least. Similar phenomena had been repeatedly observed in cisterns containing the surface water; and the leakage of these cisterns became a matter of some moment, not only from the expense of constant repairs in comparatively new cisterns, but also from the damage done to roofs and walls of apartments situated below the attics by the escaped water. Facts bear out what theory would lead us to conclude, that the newer the cistern, the more rapid and energetic is the corrosive action of the water on it.

"I was naturally led to make an analysis (a rough and qualitative one only, however), with a view to discover precisely the circumstances under which this corrosive action took place. This analysis embraced,—1. The deposit on the bottom of the cistern; 2. The supernatant water in the cistern; and, 3. The spring water, as drawn from the well before it had traversed iron pipes, or been contained in

leaden cisterns. The results were as follows: The deposit contained carbonates, sulphates, and chlorides of lead, lime, and magnesia; iron in abundance; and faint traces of soda. The supernatant water contained the sulphates, carbonates, and chlorides of lime and magnesia, with traces of soda. The carbonates and chlorides were most abundant—the sulphates less so; lime was plentiful; magnesia was in small quantity. There was no lead; and this is of importance to bear in mind; for it frequently happens that, though lead is found abundantly in the deposit on the bottom of such a cistern, it cannot be detected readily, or at all, in the supernatant fluid. Nor did this water contain distinct traces of iron. The spring water, as drawn directly from the well, contained the same salts of lime, magnesia, and soda, in similar proportion, without lead or iron. The iron found in the cistern-deposit was probably dissolved as oxide by the water as it passed through the iron pipes which convey it from the well to the Institution; but it may also partly have been derived from the soil. A more careful analysis would probably, however, have detected it in the water of the cistern, and possibly in the water drawn directly from the well, being, in the latter case, derived from the iron apparatus of the pump. Distrustful of my own analysis, I had it repeated more carefully by a friend in Edinburgh. His results were entirely corroborative of my own more rough and hasty essays. The lead in the deposit was by him converted into sulphate, with a view to ascertain its quantity. Calculating from the weight of the sulphate thus obtained, the deposit was found to contain no less than 43·18 per cent. of lead,—a large amount, to account for which it is right to mention that, in scraping the deposit from the bottom of the cistern, minute portions of metallic lead had been probably included.

"Now, the water in question curdles soap with great rapidity and ease, and is therefore decidedly *hard*. But, in considering the action of water on lead, it is important to remark the nature or kind, as well as the amount, of the neutral salts present in it. The carbonates and chlorides were much more abundant than the sulphates, while lime was plentiful, and magnesia and soda occurred only in small quantity. The water of Airthrey Well, Bridge of Allan, for instance, is said to possess no action on lead; yet it contains no less than $\frac{1}{77}$ part of its weight of salts, which are chiefly sulphates and chlorides. The experiments of Professors Christison and Taylor, and others, have established that the sulphates and carbonates are among the most protective or preservative salts, while the chlorides are among the least so. There is a difference of opinion among observers as to whether the carbonates or sulphates of lime and magnesia are most strongly protective; but there is no doubt that the sulphate of lime is a powerfully protective salt, while it is also one of the most common ingredients of hard waters. According to Professor Taylor, sulphate of lime is the salt occurring in hard waters, which chiefly prevents their corrosive action on lead; and he describes the coating deposited on the lead as consisting of the sulphate of lead. The results of Professor Christison, as well as a consideration of the chemical theory of the action, would lead to the suspicion that the latter statement is not quite accurate; for it is extremely probable, that not only sulphate,

but also the carbonate and hydrated oxide of lead, will at least be found in such deposits. Professor Taylor deduces from his investigations, that a water containing sulphates and lime is not likely to corrode, or become contaminated with, lead, and may therefore be safely used for drinking and cooking."

Art. 5.—*On the relations between Diet and external cold.* By Dr. Isaac J. Hayes, late Surgeon to the Second U. S. Arctic Expedition.

(*Amer. Jour. of Med. Sciences*, July, 1859.)

After some graphic remarks upon the habits and mode of life of a tribe of wandering Esquimaux, Dr. Hayes proceeds to say:—"Living virtually without fire, most meagrely dressed, dependent at the same time upon the hunt for every necessary of life, and almost daily exposed, in the pursuit of game, to the very lowest temperature, we are astonished at their complete indifference to the cold; not only do they seem indifferent to it as far as concerns their physical comfort, but they are able to resist all of its depressing influences. They are a strong, robust, and healthy race. Scurvy is unknown amongst them, and I have never known or heard of an instance of tubercular disease.

"I think you will agree with me in what was stated in the outset, namely, that we must look for an explanation of this wonderful power of resistance in the quality and quantity of the food consumed. They subsist entirely upon animal food; the flesh, mainly, of the walrus, seal, narwhal, and bear, and the quantity which they eat seems really enormous. I have frequently seen an Esquimaux hunter, when preparing for the hunt, eat from six to twelve pounds of meat, about one third of which was fat, and I should place the daily consumption of the men at from twelve to fifteen pounds; and, in this large consumption, they find their shield against the cold. The food is mostly taken raw, and in their long journeys they stop from time to time, unlash their sledges, and cutting off strips of frozen blubber eat them with apparent relish. I do not believe that they could live upon a vegetable diet.

"The same laws govern the Esquimaux and white men, and just in proportion as we of the Advance accustomed ourselves to the diet of the Esquimaux did we gain power to expose ourselves with impunity to low temperatures. We found ourselves continually craving animal food, and especially fatty substances, which, to us in these latitudes, would be exceedingly distasteful. Frozen blubber became quite palatable, and during the second winter, when the temperature of the cabin was rarely above 45°, and often as low as zero, it was found necessary by Dr. Kane, in order to protect his men against the bad effects of the salt, to guard the slush barrels by the strictest orders.

"The process of acclimation with us was gradual. I remember well how, in the autumn of 1853, we suffered intensely from temperature which a year later produced no impression whatever upon us, and I am satisfied that this increased power of resistance was in direc

proportion to our ability to eat and digest animal food. During a later period of the cruise, some of the party lived precisely the life of the Esquimaux during three winter months, entirely without fire for purposes of warmth, without suffering any serious inconvenience or discomfort from the low temperatures.

"It is worthy of more than the mere passing remark, that the climate is one of unusual healthfulness, and that scurvy and phthisis are unknown among the natives. In relation to the last mentioned disease, I give the fact without comment or opinion; with regard to the former, I will remark that whenever it has occurred in vessels visiting the Arctic seas it has been mainly owing to accidental causes which experience has taught us to avoid. These are: salt food, cold, and the darkness of the long winter night, with the depressing moral and physical influences which it carries in its train, and, as an occasional exasperating cause, excessive exertion.

"For the use of a salt diet there is now no necessity, and if we bear in mind the fact that wherever the crews of vessels wintering in the Arctic seas have been attacked with scurvy, they have subsisted invariably upon such a diet, we will at once perceive how all the above-mentioned causes of its development operate together to produce disease. In the first place, the salt meat is injurious in itself, and will not, in any climate, sustain the human body in health; and, in the second place, if it could be taken with impunity, so far as the salt is concerned, a sufficient quantity of it could not be eaten or digested to enable the system to ward off the depressing influences of the cold and the darkness. With a good and unlimited supply of rich fresh animal food, these last-mentioned causes either have no actual existence, or are easily avoided. The cold only becomes a predisposing cause of disease, when the vital forces are not sustained by proper alimentation. The same may be said of the darkness, although there is, doubtless, a cause independently operating upon man as upon plants placed under similar circumstances; yet rich food, plenty of water, exercise, good ventilation even at the expense of temperature, and last but not least, a healthy, cheerful tone, will, in every case, counteract the ill effects of the long-continued darkness.

"A most singular effect of the use of salt food was observed among the dogs. These animals had never been accustomed to such a diet. They could not eat it except in small quantities, and the salt of the meat, the cold and darkness, operating together upon their feeble bodies, developed a singular *epilepto-tetanoidal* disease, which ultimately destroyed nearly every animal which Dr. Kane took with him from Southern Greenland, or afterwards procured from the natives of Smith's Strait. The same was, from time to time, observable among the men, and, doubtless, for the same reason.

"I have stated that the natives for the most part eat their meat raw, and having availed myself of the knowledge of this fact to great advantage, I would suggest it to my brethren of the profession. I have frequently found that when the stomachs of very scorbutic patients refused cooked meats, that they could readily retain the uncooked flesh if frozen, or as our men expressed it, 'cooked with frost,' and in this state it seemed to antagonise more immediately the scorbutic

condition. The operation of freezing destroyed entirely the repulsiveness of the raw flesh, and the walrus and seal meat which was found best suited to their wants, was very generally thus preferred by the sick. They often relished it, especially if acidulated with a little vinegar or lime juice, when they could take nothing else.

"While fresh animal food, and especially fat, is absolutely essential to the inhabitants and travellers in Arctic countries, alcohol is in almost any shape not only completely useless but positively injurious; and in this view I am fully sustained by the well-qualified judgment and experience of our enterprising and indefatigable friend, Dr. Rae, whom we had the pleasure, not long since, of welcoming to the Academy. So well am I convinced of this fact, that, in the expedition now organising to the Arctic seas, I shall not only not give it habitually, but will carefully guard against taking any one with me who is addicted to its use. Circumstances may occur under which its administration seems necessary; such, for instance, as great prostration, from long-continued exposure and exertion, or from getting wet, but then it shonld be avoided if possible, for the succeeding reaction is always to be dreaded; and, if a place of safety is not near at hand, the immediate danger is only temporarily guarded against, and becomes, finally, greatly augmented by reason of decreased vitality. If given at all, it should be in very small quantities frequently repeated, and continued until a place of safety is reached. I have known most unpleasant consequences to result from the injudicious use of whiskey for the purpose of temporary stimulation, and have also known strong able-bodied men to have become utterly incapable of resisting cold in consequence of the long-continued use of alcoholic drinks. I do not believe that it has a single useful property, not possessed in a tenfold degree by other stimulants, and under this head I rank tea and coffee. So valuable are both of these that I am at a loss to say which is best. The English Arctic explorers almost invariably use tea, and so do the Russians; but Dr. Kane's parties, after repeated trial, took most kindly to coffee in the morning and tea in the evening. The coffee seemed to last through the day, and the men seemed to grow hungry less rapidly after taking it than after drinking tea, while tea soothed them after a day's hard labour, and the better enabled them to sleep. They both operated upon fatigued and over-tasked men like a charm, and their superiority over alcoholic stimulants was very marked. The virtue of coffee used under the above-mentioned circumstances I cannot over-praise, the only drawback to its frequent administration being the difficulty of preparing it, when the atmospheric temperature is low and the traveller is obliged to depend upon a lamp with which to melt and boil his water."

Art. 6.—*Tar and Plaster as a disinfecting application.* By MM. Corne and Demaux.

(*Comptes Rendus*, July 18 and 25, 1859.)

This application, which is a powder, is made by triturating from 1 to 5 parts of common coal tar with 100 parts of plaster. It is applied

by sprinkling it over the suppurating wound in the form of powder, or else the powder is made into ointment by mixing it with oil. In either way, but particularly as powder, the discharge is deodorized, and at the same time absorbed, the tar seeming to be the chief agent in the first part of the process. In one of the experiments at La Charité, under M. Velpeau, a gangrenous wound, discharging profusely, immediately ceased to be offensive under the free application of the powder. There appears every reason to believe that the mixture in question will be of much use in various sanitary as well as surgical matters, for it is cheap as well as efficacious, but there does not appear to be sufficient ground to laud its discovery in such high terms as were used by M. Velpeau in introducing it to the notice of the French Academy of Sciences. MM. Corne and Demaux brought the matter forward with the view chiefly of deodorizing the night-soil of Paris.

Art. 7.—*On the Mortality of London during the last three months of* 1858. By Mr. J. J. Fox.

(*Medical Times and Gazette*, April 24, 1859.)

I. *Total mortality.*

The deaths registered in the thirteen weeks ending January 1, 1859, were 17,688. Making the usual assumption for increase of population, this amounts to a mortality of 646 per 100,000. But the average rate for the autumn quarter, derived from the previous eighteen years, is 619. This autumn has therefore been $4\frac{1}{2}$ per cent. more fatal than usual. Of the previous eighteen autumns, no less than seven have exhibited a higher mortality; viz. 1840, 1843, 1844, 1847, 1848, 1853, and 1854; so that, unhealthy as this season of 1858 has been, compared with the average and with many healthy autumns, yet its mortality is by no means exceptional.

II. *Mortality from various diseases.*

In dividing the mortality into its various classes, according to the causes that produce it, we find very great difference in the degree of their prevalence. The following numbers represent the per centage from certain diseases or classes of disease above or below the average mortality from the same causes in former autumns. Where diseases are well marked, the average of the previous eighteen autumns is used; but in the *classes* of disease, and where there is reason to apprehend an altered view in the Profession as regards diagnosis or nomenclature, it has been deemed safest to derive the average from only thirteen, or even ten previous years.

The following present a mortality higher than the average—

	Per Cent.
Scarlatina	128 above.
Bronchitis	74 „
Diseases of respiratory organs	33 „
Diseases of kidneys	26 „
Rheumatism	24 „
Croup	20 „
Teething	18 „
Measles	15½ „
Pneumonia	15 „
Diseases of heart, &c.	13 „
Whooping-cough	10 „
Consumption	5 „
Paralysis	4½ „
Apoplexy	2½ „
Diseases of nervous system	1½ „

The following, on the contrary, have been below the average of former autumns:

	Per Cent.
Hydrocephalus, cephalitis, and convulsions	0½ below.
Erysipelas	16 „
Typhus	19 „
Dysentery	35 „
Diarrhœa	47 „
Smallpox	54 „

These numbers suggest the following remarks:—

1. With regard to scarlatina, which, it must be recollected, includes deaths from diphtheria, the excess over the usual rate is very great. The only autumn in which a larger mortality from this cause is recorded, is 1848. It has been on the increase since the spring of 1857, when it was at its minimum point. The northern and eastern divisions of London have suffered most from it; and, with the exception of a solitary week at the end of November, it reached its maximum for this quarter in the month of October. In this respect it followed the same law as the average of ten years, showing that in this disease, extremes of temperature do but little to aggravate its intensity.

2. It is very different with the next cause on the list—bronchitis. This did not exceed the average at the beginning of the quarter, but rose gradually in October, and more rapidly as the cold weather of November set in. In the third week of November the cold was intense for the season, and, accordingly, it was in the following week that deaths from bronchitis reached a maximum. They decreased gradually from that point, but continued high throughout the month of December.

3. Measles, though more fatal than in the summer, are in reality declining, as they present a lower excess above the average of the season. They prevailed in the northern, and still more in the central division of London,—the latter returning 32 per cent. of the deaths from measles, although its population may be estimated at about 15 per cent. of the whole.

4. The great mortality from diseases of the kidneys may, perhaps, be referred to the existence of the same mysterious atmospheric constitution that causes or accompanies the epidemic of scarlatina.

It must not be supposed to be made up by cases of renal disease, the sequela of scarlatina. Such cases come under the latter name. In them the mortality is almost limited to childhood, whereas that from renal disease preponderates in the middle and latter periods of life. Although, therefore, there is evidence of the coexistence of increased disease of the kidneys with a scarlatina epidemic, it is not easy to explain the connexion between them.

5. In spite of the unhealthiness, the low mortality from typhus, dysentery, and diarrhœa is remarkable. It must be mentioned that the name typhus includes two, if not three separate diseases, one of which is closely related to diarrhœa in its seat, and probably in its causation. It is an interesting question whether the low mortality from these diseases is an accidental character of the season, due perhaps to some antagonism with the renal and scarlatinoid epidemic, or whether it is simply the result of improved sanitary condition, under the management of our Officers of Health.

III. *Meteorology of the autumn.*

The temperature of September was unusually high, and that of October rather above the average; but a rapid fall occurred in November, which was colder than has been known for many years. December was marked by great fluctuation; but on the whole its temperature exceeded the average.

The cold weather of November was accompanied by a great deal of easterly wind, which prevailed for six weeks, from the third week of October to the fourth week of November. The break-up of the cold at the latter part of November was most sudden and trying to the human constitution.

The amount of rain through the quarter was very much less than usual; hardly any fell in September and November. So also the humidity of the air was less than the average in each month, except December.

The barometer was particularly high in October; in November it was chiefly remarkable for its wide range. The movement of the air was in excess in September and October; in November it was less than usual.

IV. *Comparative mortality of divisions of the metropolis.*

We saw, at the commencement of this paper, that the mortality in the whole of London (subject to error in estimating the increase of population) was at the rate of 646 per 100,000. The deaths in the several divisions, if examined on the same principle and corrected for outlying workhouses, hospitals, prisons, and lunatic asylums, give the following mortality to each:

Western Division	. . . . .	540
Southern ,,	. . . . .	642
Northern ,,	. . . . .	648
Eastern ,,	. . . . .	684
Central ,,	. . . . .	698

The exemption of the Western districts from the high mortality that prevailed in the rest of London, is very remarkable. Although the autumn of 1858 has been generally so much more unhealthy than that of 1857, yet in the Western division the mortality was the same in each year. The difference between the mortality of the most healthy and that of the least healthy division of London, has amounted this quarter to 158 deaths in a population of 100,000, which is nearly a quarter part of the mortality of the whole.

(B) ACUTE DISEASES.

ART. 8.—*On the amount of Urea excreted in typhoid fever.* By Dr. WARNCKE.

(*Bibilothek for Læger ; Dublin Med. Press,* July 27 and Aug. 3, 1859.)

During an epidemic of typhoid fever, which raged almost incessantly during the latter half of last year, Dr. Warncke examined the urine of most of the patients treated in the medical section A of the Frederik's Hospital in Stockholm; and in the present paper four illustrative cases are given in detail. Dr. Warncke's words are put in an English dress by Dr. W. D. Moore.

As a preliminary measure, the author gives the result of some investigations as to the quantity of urea which is normally secreted:

"The average quantity eliminated during twenty-four hour is—

For an adult man upon mixed diet	33·7	grammes.
,, ,, vegetable diet	25·3	,,
For an adult woman upon mixed diet	26·8	,,
,, ,, vegetable diet	20·1	,,
Between 15 and 18 years, a boy excretes upon mixed diet	19·8	,,
,, ,, a girl ,, ,,	18·0	,,

"These are the average results of seven examinations for each individual. There are many causes which, in the normal state, may modify the quantity of urea, but the inaccuracy which might arise from this source is partly removed by employing the average number of a long series of examinations, and disappears when the latter is compared with the average figures of an equal number of examinations of the sick.

"The urine of a patient labouring under typhoid fever is not distinguishable by external characters from any other. It may be pale, may be excreted in large quantity, may be clear or turbid, opaque, deposit a copious sediment, be deeply coloured and secreted in small quantity, which is particularly the case in the commencement of the disease; but what characterises typhoid urine is, above all, an *absolute and relative increase of urea.* This property, of containing an augmented quantity of urea, is retained by the urine through the stages in which the disease may be said to increase; when, on the contrary, the latter diminishes, the amount of urea is likewise lessened, and the quantity continues smaller after the end of convalescence until the restitution of the body is completely effected.

"The following table exhibits the average numbers of more than

fifty investigations (on thirty men and twenty women), which were repeated daily during the stay of the individuals in hospital:

	Male.	Female.
In the first week . .	43·2 . .	34·
„ second „ . .	39·9 . .	30·2
„ third „ . .	30·9 . .	24·1
„ fourth „ . .	23·2 . .	20·5

"If these numbers be compared with those representing the quantity of urea which is normally excreted, especially under the use of vegetable food, and there are very few patients who use even it, it must be allowed that increase of the quantity of urea is a constant phenomenon in typhoid fever; a phenomenon indicating a highly retrogressive metamorphosis of the nitrogenous tissues, muscles, connective tissue, blood-corpuscles, &c. But this character of the urine is not peculiar to typhoid fever; in many other acute diseases the quantity of urea is increased, as in pneumonia, pleuritis, rheumatic fever, &c.; but in these all the other constituents of the urine of organic origin are simultaneously augmented, while this takes place with the urea in a less degree. In my opinion, we cannot attach too much importance to this circumstance; I believe that in it we shall find a starting point for further investigations as to the nature of the disease. Thus, if we consider the reciprocal relation of uric acid and urea, there is every reason to assume that the latter proceeds partly from the uric acid; not that all the urea which is excreted was formerly uric acid, far from it; there are many other links in the chain, but there are numerous facts to prove that the final destination of uric acid is to be changed into urea. If this be the case, the change must take place in virtue of a process of combustion, similar to that which may be produced without the body by strong exciters of combustion. An increased quantity of organic matters in general, indicates an augmented supply of combustible materials; but an increased quantity of urea, without any simultaneous augmentation of the other organic compounds in the urine, as is the case in typhoid fever, points, on the contrary, to a more energetic combustion. I have said, that in this difference I saw a sign-post pointing in the direction our investigations should take; but we still know too little of the combustible agents employed in the living organism.

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"If the increase of the quantity of urea is thus a common character of all typhoid fevers, the increase is not equally great in them all; it is certainly directly proportionate to the height of the temperature and the degree of emaciation. I am not indeed able to establish this by definite numbers, as circumstances, of course, do not permit the use of scales, and the gradual loss of flesh is less striking to a daily visitor, while as to temperature, its increase and diminution are connected with particular periods of the day, whereas the evacuation of urine proceeds at very different times, often indeed at very long intervals. Thus much is, in all cases, certain, that the temperature far exceeds the normal, and that in a proportion corresponding to the scale I have above given for the urea. Thus, in the first week of the

disease the temperature has, according to the investigations of Traube, Griesinger, and others, ascended to from 104 to 106·7 F., and continues at that height, according to the degree of illness, until the fourteenth or sixteenth day, when it begins to diminish, and sinks by degrees to the normal standard. Both the amount of urea and the temperature are also proportionate to the rapidity of the pulse.

"A diminution of the quantity of urea, though never to a degree below the normal standard, takes place but seldom. I have constantly found this principle diminished shortly after the occurrence of violent hæmorrhage at the height of the disease, particularly when the loss of blood is from the intestinal canal; after the hæmorrhage has been arrested, the amount of urea again increases in the course of one or two days. It is reasonable to connect this circumstance with the loss of blood, and in my opinion with the diminution of the number of the blood-corpuscles; at least the same does not take place in other evacuations from the intestinal canal, nor in the not unfrequent instances, where the constituents of the blood-serum in particular are lost by the excretion of a greater or less quantity of albumen in the urine.

"The amount of urea is, in the next place, diminished, when the enlargement of the spleen is very considerable. It is only lately that my attention has been directed to this point, and I have, therefore, been unable to investigate the subject with the accuracy it deserves. On looking over the numbers for the several days, I found in eight patients a remarkable sinking of the amount of urea excreted, and on reading the histories of their cases, I observed that in five the tumour of the spleen was mentioned as being particularly large exactly on the same day; in the other three no allusion is made to it; possibly the came condition was present without having been mentioned.

* * * * *

"Complications with other diseases, especially inflammations of the respiratory organs, which occurred very frequently in this epidemic, are wholly without influence on the amount of urea excreted. It would appear as if the great changes, which take place with the metamorphosis of tissue in typhoid fever, absorb all the minor changes, with which the other diseases may be attended.

"Lastly, there is an observation to which I would direct the attention of my readers.

"In many instances the patients have, during the entire course of the disease, expressed a desire for food, and in others they have eaten what has been given them, without having asked for it; in none of these cases has the food consumed been followed by an increase of the quantity of urea. I shall hereafter revert to this remarkable circumstance.

"If the determination of the urea has yielded no great practical advantage, I still believe, as I have already said, that the result obtained may be important in leading to a more correct explanation of some particular phenomena. The greatest advantage we shall derive from it, concerns, in my opinion, the differential diagnosis.

"Thus, when I find the increase of urea after a certain type, without any augmentation of the other organic constituents of the urine, to

be peculiar to typhoid fever, I am easily led to seek in this fact a diagnostic sign between this affection and the diseases, which, in other symptoms, resemble it. I have, therefore, extended my investigations to gastric fever and meningitis.

"As concerns the first of these two diseases, it is etiologically very nearly allied to typhoid fever. Wherever the latter occurs epidemically, gastric fever almost always prevails at the same time, sometimes preceding the epidemic, at other times not occurring until the latter is at its height, in which case it is often much more extensive. This is greatly in favour of the view, that these two diseases depend on similar, if not identical, causes. Now, if to this be added, that they strongly resemble one another also in their symptoms, that from slight cases of gastric fever we have gradations to the severe, which can scarcely be distinguished from typhoid fever, it is natural that the opinion should be so extensively and almost universally received, that the two diseases are closely allied to one another, and that every gastric fever, which extends over fourteen days, is simply for that reason a typhoid fever.

"In refusing my adhesion to this view, being convinced that there is an essential difference between these two diseases, I rest my opinion principally upon the examination of the urine. For having found in the numerous cases, in which all the signs of typhoid fever were present, and where, moreover, the correctness of the diagnosis was, in many instances, confirmed on dissection, that the above-mentioned condition as to the quantity of urea invariably existed; and having, on the other hand, in the number of patients, in whom such manifest signs did not exist, observed an entirely different state of things to prevail in this product so important to the whole vital process, should I not be justified in presuming, that I had to do with two essentially different diseases?"

ART. 9.—*On the connexion between the Heat of the Body, and the secreted amounts of Urea, Chloride of Sodium, and Urinary Water, during a fit of Ague.* By Mr. SIDNEY RINGER.

(*Proc. of the R. Med. and Chir. Soc.*, June 28, 1859.)

The author commences his paper by a reference to the observations of Von Bärunsprung, Zimmermann, Michael, Wunderlich, and others, on the temperature of the body during ague, and to the observations of Traube, and Lochman, Redenbacher, Moos, and Hammond, on the excretion of urea, chloride of sodium, and water, during the fit. He then states that the object of the following paper was to trace out more particularly the connexion, if any, between the height of the thermometer and the excreted amount of these substances; and he then describes his method of investigation, and the precautions taken against sources of error.

His observations were made on two untreated cases of ague (one of quotidian and one of tertian) in University College Hospital, under the care of Dr. Parkes; and they are recorded in a series of charts and tables, showing the following particulars—

1. The temperature of the body (as judged by the thermometer in in the axilla, after the manner of Wunderlich) every quarter of an hour for several hours before, during, and after the fit.
2. The hourly excretion of urea before, during, and after the fit, in the first case; and the excretion according to stages, in the second case—as determined by the method of Liebig.
3. The hourly excretion of chloride of sodium and of urinary water during the same periods, in the first case, and the excretion by stages, in the second.
4. The quantity of fluid drunk.

The following are the results in the first case (quotidian):

The temperature of the body commenced to rise from forty-five to ninety minutes before any change was perceived by the patient, and continued to rise during the whole of the cold stage and during part of the hot; it fell during the latter part of the hot and the whole of the sweating stage. The severity of the fit could be determined by the character of the rise, whether rapid or with oscillations, and by the variations of the temperature during the several stages; but the charts of temperature, and the comments given at length in the paper, must be consulted in order to exhibit this clearly.

The urea was found clearly to increase during the fit—as stated by Traube. The increase commenced before the first feeling of cold, and before, indeed, the rise in the thermometer. The maximum increase of urea was at the end of the cold stage, or just at the commencement of the hot (*i. e.* before the temperature reached its highest point); and from this point the amount fell during the hot and sweating stages. There were variations in the amount of urea, which closely corresponded to variations in temperature, but often preceded them a little. The amount of increase was considerable (from 200 to 500 per cent.), and was definite—that is, during five successive fits the amount corresponding to each degree of temperature was the same, so that the temperature might be calculated from the amount of urea, or the reverse. A greater increase corresponded to a single degree at a high than at a low temperature. The excretion of urea was not influenced by the excretion of urinary water.

The chloride of sodium was also increased, and varied with the temperature, but in a much less close degree. The increase was very considerable, and was at its maximum at the same period with the urea. The excretion of chloride of sodium was evidently much more closely connected with the excretion of water than in the case of urea.

The urinary water was also definitely increased, *i. e.* a certain quantity for each degree; and this was evidently independent of the fluid drunk.

The amount of water drunk in no way influenced the total amount of water excreted. Much more was drunk than was excreted.

The author next relates the observations made on the same patient when quinine was given.

A scruple being given before the fit, and just as the temperature commenced to rise, delayed the rise for an hour, but had no other effect on the temperature on that day, and none on the urea, chloride of sodium, and water. Another scruple being given at night after the

fit, completely cured the patient, as far as subjective symptoms were concerned. On the following day he had no shivering, no warmth, and no sweating, and the temperature remained the whole day quite normal; yet the urea and chloride of sodium increased at the time they would have done had he had a fit. On the next day the temperature was still normal, but the urea and chloride of sodium still rose during what would have been the fever hours; but the rise on this day was much less than on the day before. The effect of quinine, then, was to dissociate those two phenomena—viz., the temperature on the one hand, and the excretion of urea and of chloride of sodium on the other. The same fact has been noted by Redenbacher. The quinine affected the temperature at once, but the urea and chloride of sodium more slowly.

In the second case (of tertian ague), the temperature followed the same laws. The urea, chloride of sodium, and water, were determined only during each stage. There was found to be an increase in all three constituents—the increase being greater during the cold stage. The urea was more than double the amount in the cold stage than in the previous apyrectic hours. In this case charts are also given of the pulse, showing its close correspondence with the temperature.

In addition to these cases of ague, the author subjoins one of hectic fever, occurring in a phthisical patient of Dr. Walshe's. The subjective phenomena were very similar to those of ague, as there was a well-marked cold, hot, and sweating stage. The temperature followed the same rules as in ague, and there was also an increase in the urea and chloride of sodium during the cold and hot stages. There was a difference in this respect, however, that the urea fell before the rise in the temperature commenced, and that its increase afterwards was even less than in ague. It also rose again just at the end of the sweating stage. So that, in spite of the diversity of cause, the phenomena would appear to be very similar in ague and in hectic fever.

The author concludes his paper with a series of conclusions, recapitulating all the results to which his observations have led, and which have been given generally in the above abstract.

ART. 10.—*On Typhoid Fever in India.* By Dr. EDWARD GOODEVE, Physician to the Medical College Hospital, Calcutta.

(*Indian Annals of Med. Science*, Jan., 1859.)

The substance of this communication may be gathered from the following quotation. Dr. Goodeve is speaking to students in a clinical lecture :

"I think that these cases illustrate the disease very well and agree closely with the descriptions which I have given you of the typhoid fever of Europe, and I also think that you will admit that they differ in many respects from our ordinary remittent and intermittent fevers. They agree with the typhoid fevers in their long duration, in beginning in a mild manner, and in the slowly progressive and ingravescent character of the symptoms. Most of the other cases that I have seen

began also in a slow and imperceptible manner. Indeed I think that it is the mildness of the accession of the symptoms, the indefinite nature of the febrile paroxysms and the persistence of the pyrexia, day after day, with increasing nervous depression, or with an amount of nervous or muscular depression not to be accounted for by the degree of the fever which first gives the suspicion of the real nature of the disease, and I have often told you that these fevers which begin as it were imperceptibly are often more serious than those in which the pyrexia is developed more quickly, and that you should be very cautious in your prognosis in such cases.

"All the cases cited ran a long course, thus No. 1 was not convalescent till between the 35th or 40th day; No. 2, till between the 25th or 30th; No. 3, till the 29th, and the disease was prolonged afterwards by tedious sequelæ; No. 4, till the 15th or 16th day, but it may have been longer; No. 5, about the 22d day; No. 6, till the 25th, day but the swelling of the parotid gland and diarrhœa protracted recovery for much longer; No. 7 has been two months in hospital and was eight days ill before admission.

"In all the above cases, the diarrhœa was marked and begun early. In one or two of them it ceased with the fever, but in the others lasted beyond it. You will note that in all the stools were more or less fluid, not always abundant, sometimes, but not always offensive; they were generally of a yellowish colour with a yellowish or drab coloured sediment. Hemorrhage from the bowels appeared with the diarrhœa in cases 1, 3 and 6. In none of the cases, which I have met with has the hemorrhage been difficult to control. A symptom of this complaint is the readiness with which the bowels are acted on with slight doses of medicine, thus, I have seen a teaspoonful of castor oil produce several evacuations in a young man of twenty. This proneness to be purged by slight laxatives should always excite suspicion as to the disease. But you must not suppose that diarrhœa is an invariable symptom of typhoid fever, in some cases it does not occur in the beginning of the complaint. Sometimes, indeed, constipation attends the commencement, but sooner or later relaxation of the bowels sets in. Time does not allow me to comment fully on all the other symptoms which those cases have shown, but you will have seen that they all showed signs of alteration of the function of the nervous system in some way, as in loss of nervous energy, muscular tremors, deafness, drowsiness, or delirium. In most of them there were catarrhal symptoms and the physical signs of congestion of the mucous membrane of the bronchi. They were all attended with adynamic signs as manifested in the dry tongue, teeth covered with sordes, rapid and feeble pulse, and more or less muscular debility. In all there was great emaciation, and when the disease had been fairly established, the dusky or leaden hue of countenance. This last is always a well-marked feature, and I frequently drew your attention to it in the cases while under treatment. Among the rarer phenomena met with were the great aphthous exudation in No. 3, and the swelling of the parotid gland in No. 6.

"I confess that I have not met with rose-coloured eruption so frequently as I should have expected, but this eruption is by no means

always a necessary occurrence. Dr. Jenner mentions that it is oftener absent than present in patients above thirty, and Dr. West tells us that it is frequently absent in young children. Dr. Bartlett in his work on the fever of the United States shows that the spots are often absent in North America. The patient requires to be seen in particular stages of the disease for them to be found.

"In cases No. 4 and 5 they were very distinct, and also in case No. 5, of Dr. Scriven's paper in 8th No. of the *Indian Annals.* The amount of the eruption varies very much even in Europe, the number of spots varying from 2 or 3 to 50 or more. When there is such recognised latitude as this, one can really admit the possibility of going a little further, so that there shall be no eruption at all, without altering our opinion of the nature of the disease. In case 3, the eruption was similar in many respects to that of the red fever, of which I have shown you so many examples, but the attendant symptoms and the course of the diseases were unlike those of that complaint. Dr. Jenner tells us that a red rash such as is described in this case sometimes occurs, and mentions an instance in which a patient so affected was supposed to be labouring under scarlet fever.

"I think that you will recognise the similarity between the cases of fever which I have related and typhoid fever, and I think that you will as readily perceive differences between them and our ordinary ephemeral, continued, intermittent and remittent fevers; differences quite enough to stamp them as belonging to a distinct disease, and to one, probably due to a different cause. From the very commencement, there is often sufficient to distinguish them from the ephemeral fevers. In these last, there is less depression for the amount of fever than there is in the typhoid species and the quick termination of the complaint soon decides the nature of the case. In the ardent continued fever, the pyrexial symptoms are even in the beginning more severe and they run a quicker course. In our intermittent fevers, the paroxysms are more regular, the stages more marked. If severe, the progress of the disease is much more rapid; if not severe, though the paroxysms may in some cases recur daily, there is much less nervous depression. Thus, it is not unusual for a fever of intermittent character to recur daily for a fortnight or more, and yet in the interval of the paroxysms, the patient continues free from depression or debility. There is seldom also in any of the above, the same amount of derangement of the bowels, and often none at all. The disease which we call red fever, or the scarlatina rheumatica of Dr. Copland, often begins with but slight fever, and often with great relaxation of the bowels, but the eruption comes out much earlier and there is almost always implication of the mucous membrane of the mouth; the eruption is seldom succeeded by prolonged adynamic symptoms, and in many instances there succeeds a remarkably slow state of the pulse, the beats often descending for a day or two to 48 and 50 per minute. From the remittent, the typhoid fevers are distinguished by the more quick progress of the former, the rapid supervention of grave symptoms, the greater amount of pyrexia even in the first days, the frequent early coming on of hepatic and gastric derangement, and the rapid occurrence of death in the severe cases. In the United States of

America where the typhoid and remittent fevers prevail, there appears to be no hesitation in separating them. There may, I think, however, occasionally be considerable difficulty in distinguishing clinically between some remittents and typhoid fevers when the former is of a mild character. But though I believe that the disease I speak of to-day does not belong to our malarious fevers, I believe that there is a fever described in Indian works on medicine which it does resemble. I allude to Mr. Twining's and Mr. Martin's 'Insidious Congestive Fever of the cold season.' If you compare the descriptions of this disease as given by these authors with the symptoms of typhoid fever, I think that you will find that there is great similarity. Mr. Twining tells us that the pyrexia is so trivial that a practitioner not acquainted with the disease hardly sees an excuse for adopting active treatment, and the patient attends to his business for some days after the disease has begun. He notices the duration of the complaint and the comparatively hopeless state from which patients recover. He does not speak of diarrhœa as a constant symptom, he says 'at an early stage of the disease, the bowels are usually costive, and when the calls to stool are frequent, the evacuations are exceedingly scanty. If the abdomen be examined, there is some fulness at the epigastrium and across the hypochondrium, and this tension is not least in those rare cases where slight tendency to diarrhœa has been manifested.' But though Twining does not lay so much stress upon the looseness of the bowels, this quotation proves that there was a great deal of abdominal irritation in his cases, and possibly the scanty stools alluded to were really the usual fluid evacuations of the typhoid fever. These are not necessarily free and copious, even constipation has been at times met with in Europe, as you will perceive in Dr. Jenner's papers. In further proof of the similarity of the diseases, Twining himself says that 'in a few rare instances when patients have died after a protracted fever of this kind, superficial ulcerations of the mucous membrane of the small intestines are found.' In the second edition of his work on the diseases of India, he himself seems to think that further observation might establish a resemblance between his congestive fever and 'some modifications of European typhus.' I myself think that a dispassionate consideration of all the circumstances will make it pretty certain that it really is typhoid fever. In Twining's day, the typhus and typhoid fevers were not considered distinct, as they now are. It is evident, however, that he had felt the necessity of separating this fever from the ordinary malarious fevers of the country, and had he possessed the same amount of discriminating knowledge of the continued fevers of Europe that we now have, I think that he would have classed the congestive fever with the typhoid species.

"I have already told you that the special anatomical lesions of typhoid fever are ulcerations of Peyers patches and the glands of the mucous membrane of the small intestines and fulness and congestion of the mucous membrane, but I do not mean to assert that all the fevers in which, after death, ulcerations of these patches are found are necessarily examples of this disease alone; because I have seen cases of *post-mortem* examinations in which these lesions were observed after death from simple remittent fever.

"I beg of you not to suppose that every case in which you find typhoid symptoms is one of typhoid fever; there are many diseases which may resemble it in some manner, such, for instance, as obscure suppurative diseases, some asthenic pneumonias, some forms of phthisis, &c. You must in every case therefore investigate whether you have to deal with the simple general typhoid fever or some low form of inflammation with feeble or imperfect febrile re-action."

Art. 11.—*On the relation of Diphtheria to Scarlatina.* By Dr. Ballard, Medical Officer of Health for Islington.

(*Medical Times and Gazette*, July 16 and 23, 1859.)

During the first three months of the present year, Dr. Ballard took great pains in investigating the history of every case of death from diphtheria or any other analogous disease, in the district of Islington. These cases, which are 80 in number, are arranged in three classes:

Class 1.—Cases in which there was satisfactory evidence of the presence of the true diphtheritic exudation upon the throat—in all 56.

Class 2.—Cases which were certified as deaths from "diphtheria" by the medical attendant, but in which no particulars of the appearance in the throat are to be obtained—in all 13.

Class 3.—Cases in which Dr. Ballard was assured by the medical attendant that the exudation was absent—in all 11.

These are the data upon which Dr. Ballard bases his conclusions.

"The following facts," says Dr. Ballard, "may contribute towards solving the problem of the mutual relation of these diseases. In themselves they appear opposed to the hypothesis that they are merely phases of the same malady:

"1st. In 7 cases of Class 1 the diphtheritic sore throat was stated to have been associated with recent scarlatina. In only 2 of these did the rash appear in the course of the throat affection. Out of the remaining 5 cases in which the rash appeared first and the diphtheritic sore throat secondarily to it, the rash had in 4 cases left the skin before the exudation upon the mucous membrane made its appearance. I may add that in other instances that have come under my notice both the rash and sore throat of the scarlatina have quite disappeared before the symptoms of diphtheria set in.

"2d. In 47 instances, 38 of them being of Class 1, I was able to obtain satisfactory information as to the patient having suffered from scarlet fever at more distant periods. The following represents the proportion of those who had and had not thus suffered:

—	Had scarlatina previously.	Not had scarlatina previously.	Total.
Class 1 . . .	9	29	38
Class 2 . . .	1	2	3
Class 3 . . .	2	4	6
Total . . .	12	35	47

"This proportion of 1 to 3 does not, I imagine, differ greatly from that which would be found to exist among persons selected in any other manner from the same ages and the same stations of life. In the 12 patients who had had scarlatina, the occurrence of the disease was dated back to periods varying from six months to five or six years. Now, few occurrences in medical experience are more rare than a second attack of scarlet fever: all writers seem to agree in this. Dr. Willan only met with a single instance in 2000 cases, and Bouchut says that he has never met with a well-authenticated case at all. Still, as I desire to state this question fairly, I may say that, although I have never myself seen a second attack of scarlatina with rash, I have on more than one occasion seen persons who have had scarlatina attacked with sore throat when attending upon persons suffering from true scarlatina, and this at a period as short as a year from their own attack. This appears to me a new mode of viewing the matter; it is one on which the experience of the profession should be expressed.

"*There is a polymorphism in disease*, as in crystallography. Witness the varieties of true and masked agues, the almost identity of smallpox and vaccinia, the undoubted relation of erysipelas and puerperal fever, of regular and irregular gout, of the several forms of cancer, &c. And with respect to scarlet fever, practical accoucheurs know very well the danger to which a puerperal woman is exposed when subjected to the influence of scarlatina poison. An impression has long been growing up in my own mind that there is a form of fever to which they are liable that bears to scarlet fever the same relation that another form does to erysipelas, and that this fever is of a very fatal type. I have seen several such cases in consultation where no rash or even sore throat have been developed, but where the woman has sunk as under the influence of a powerful depressing poison. I know that true scarlatina with rash may be developed under such circumstances; but what I am now speaking about is a fever without rash, and bearing characters different from ordinary scarlet fever.

"It may be that the amount of protection afforded by a previous attack of any of these polymorphous maladies in one shape against an attack in another shape varies from *nil* to something as nearly absolute as can be. It seems to me that this is a point to which scientific inquiry might be usefully directed.

"3d. Just as an attack of true scarlet fever furnishes no protection against an attack of diphtheria, so the following case indicates that diphtheria furnishes no protection against scarlet fever. Three children in a family in my district were attacked with diphtheria in August, 1858. Two of them died; the third, aged three years, recovered. I saw these children, and satisfied myself that there was no error in the diagnosis. In January, 1859, the child that recovered was attacked with scarlet fever, after playing about upon a carpet brought from a house where a fatal case of this disease had occurred. There was both the rash and the usual throat affection, but no diphtheritic exudation; and the child died.

"Among all the cases, fatal or otherwise, that I have investigated,

I have not met with any instance in which diphtheria has appeared to have been communicated from a patient with scarlatina, except where the scarlatina has been communicated also. Neither have I at present met with more than one instance in which cases of diphtheria and cases of scarlatina occurred about the same time in such a manner as to favour the idea that they were varieties of the same disease.

"5th. The mortality from epidemic sore throat during 1858, if this disease were but a form of scarlet fever, would be expected to have borne some relation to the mortality from the latter disease, and to have fluctuated in harmony with it. Such, however, was not the case, as shown by the following table:

Deaths which occurred in Islington during each of the four quarters of 1858.

——	1st Qr.	2d Qr.	3d Qr.	4th Qr.
Scarlatina	9	4	34	69
Epidemic sore throat . .	5	15	22	15

"The greatest number of deaths from epidemic sore throat occurred in the third quarter of the year, but from scarlatina in the fourth. The number of deaths from epidemic sore throat was the same in the second and fourth quarters, while in the former there were only 4 from scarlatina, and in the latter 69.

"I may add that as scarlatina declined in the first quarter of the present year, the deaths from epidemic sore throat (nearly all diphtheria) increased. Thus there were registered 29 deaths only from scarlatina, but 20 from epidemic sore throat.

"Again, the greatest mortality from scarlet fever occurred in the six weeks from October 17th to November 27th. During this period 48 persons died of scarlet fever, but only 5 of any form of epidemic sore throat, and during four of those weeks, viz., from October 24th to November 20th, no patient died from epidemic sore throat. When, however, the mortality from scarlet fever was checked, as it was most remarkably, on the occurrence of the very severe cold about the 26th of November, the deaths from epidemic sore throat reappeared in the returns.

"*Relation of diphtheria to other forms of sore throat.*—The prevalence of sore throat not diphtheritic in character during the past year, has been matter of general remark. Many, if not most, of these throats exhibited some approach to the colour of the mucous membrane when about to become the seat of diphtheritic exudation. These sore throats appear to bear the same sort of relation to diphtheria as diarrhœa bears to cholera in epidemic seasons. Just as in any cases of diarrhœa in an epidemic period, it is impossible to predicate that it will not pass into cholera, if neglected, so, in the ordinary sore throats which have lately presented themselves, no one would be bold enough to assert that any one might not before long

exhibit the characteristic symptoms of true diphtheria. A fact upon which I would especially rely in support of this view, is the occurrence of non-diphtheritic sore throats equally with diphtheritic sore throats among the members of families where deaths from diphtheria had taken place. Out of forty-seven families in which a death from diphtheria occurred (Class 1)—

	Families.
Some other members of the family suffered from diphtheria in . .	9
From other forms of sore throat, in	15
Some members suffered from diphtheria, and others from sore throat, in	8
Neither diphtheria nor sore throat occurred in other members of the family, in	15
	47

The severity of these cases of sore throat varied considerably. In some it was a slight attack, lasting but a few days; in others there was so much febrile disturbance as to demand medical assistance; in others, again, there was ulceration, suppuration of the tonsils, or sloughing of some of the tissues. In some families the earlier cases were of sore throat, in others the earlier cases were diphtheritic."

ART. 12.—*The uses of bleeding in Inflammation and other diseases.* By Dr. J. HUGHES BENNETT, Professor of the Institutes of Medicine in the University of Edinburgh, &c.

(*British Med. Journal*, May 21, 1859.)

In some remarks elicited by Dr. Markham's recent communication to the Royal Medical and Chirurgical Society ('Abstract' XXIX., p. 25), Dr. Bennett says:—"Though it has been industriously circulated that I am opposed to bleeding under all circumstances, so far is this from being the case, that I have carefully maintained the contrary. Thus, in my original paper in the 'Edinburgh Monthly Journal' for February, 1857, pp. 782–3, I observe:—'But whilst large and repeated bleedings, practised with a view of arresting the disease, appear to me opposed to a correct pathology, small and moderate bleedings, directed to palliate certain symptoms, and especially excessive pain and dyspnœa, may reasonably be had recourse to, and unless there be great weakness, without any fear of doing injury. I have often been struck, especially in cases where large thoracic aneurisms cause these symptoms, with the small loss of blood which will occasion marked relief. The same result may be hoped for in other cases where the congestion is passive, even when that is associated with active repletion of blood, followed by exudation. But I need scarcely remark, that this mere palliative object of bloodletting is not the ground on which the practice has hitherto been based, and that in this point of view it requires to be very differently explained.' Again, at page 795, I say:—'There are cases, which were formerly mistaken for inflammation, in which bloodletting may still be useful. I allude to those where an obstruction to the circulation exists in the heart and lung, *dependent*

on over-distension on the right side of the former organ, and cases of venous congestion, engorgement, and perhaps œdema of the latter: also, certain cases of bronchitis preventing aëration, of aneurisms, and of asphyxia. Although even here the true value of the remedy has yet to be positively ascertained, the special cases demanding it more carefully discriminated, and the mechanical principles which justify the practice determined.' These same passages are given *verbatim* in the second and third editions of my 'Clinical Lectures on the Principles and Practice of Medicine.'

"It follows that, in the very class of cases in which Dr. Markham says he has bled with advantage, I have always maintained the utility of employing general bloodletting with moderation. So with topical bloodletting, wherever it can directly operate on the inflamed or congested part, it may be beneficial, as in certain external inflammations, conjunctivitis, or hæmorrhoids; but in deep-seated internal inflammations it can be of little benefit. This is a widely different method of employing the remedy from what was formerly practised; viz., by repeated large bleedings, which lowered the pulse and exhausted the patient, at a time when he required all his strength and vigour to support the new changes in growth required by the economy. I believe that an equally good effect would have resulted in some of Dr. Markham's cases, from the extraction of one half or even one fourth of the amount of blood he took away. So far, however, is the proper use of bloodletting as a palliative in inflammation, and as a curative measure in congestion of the heart, asphyxia, and so on, opposed to pathology, that it is quite in harmony with it; and, in all these cases, its good effects fully explain the benefits, temporary and permanent, which have been recorded in its favour by practitioners both ancient and modern."

Art. 13.—*On the indications for bloodletting.* By Dr. Skoda.

(*Prager Vierteljahrschr.*, Bd. 1, 1859; and *Edinburgh Medical Journal*, May, 1859.)

Professor Skoda, in the course of his clinical lectures, had occasion to make some remarks on the indications for bloodletting, of which the following is the substance: Venesection is only justifiable when, by a reduction of the quantity of the blood, dangerous contingencies, which have a distinct relation to the general mass of the blood, can be thereby removed. Inflammatory disease is of itself no indication, and equally valueless is the so-called nature of the fever—inflammatory, adynamic, &c. The condition of the pulse, as to strength and feebleness, is more the subjective idea of each individual physician, and cannot, therefore, be adopted as a directing indication for venesection. Real or apparent debility is a term conveying no more certain meaning, for the debility may be either muscular, mental, or merely relating to the senses; while others include in the term, diminution of the pulse or of the temperature. The remarkable observation, that the great muscular debility of many febrile diseases is often much lessened by bleeding, and which led to the supposition of a false debility, produced by oppression of the nerves, removeable by bloodletting. But this

fact is equally explicable by the consideration that muscular debility dimishes with the diminution of the fever, and this is equally striking whether venesection have been used or no. Only, bloodletting is a new loss, which must be added to that already caused by the febrile movement. Many people can withstand the loss of blood better than others; and there can be no doubt that a certain amount of blood may in some produce derangements only to be speedily removed by bloodletting. That, however, is but an individual case, and can no more be elevated to a general rule, than the similar fact that some individuals cannot bear in the smallest doses medicines which in others produce their beneficial effects only in very large ones. Accordingly, we may, in robust individuals, employ bloodletting even to allay certain symptoms not having a distinct connexion with the amount of blood; but a favorable result in their case must never induce us to extend the practice to patients already anæmic, and such practice must be carefully avoided in diseases which tend to terminate in anæmia. Loss of blood will be borne well as long as sufficient remains for the nourishment of the organs. The inevitable alteration in the composition of the blood, consisting as it does chiefly in an increase of water, is speedily corrected by the secreting organs. Serious disturbances only present themselves in such as are incapable of replacing the blood lost, or in whom the loss goes on faster than is compatible with due nourishment. Venesections, performed from time to time, are often borne without detriment; how long this may be continued we cannot distinctly say. Bloodletting in acute inflammatory diseases, when not too frequently or too largely practised, have no influence in hastening or retarding the convalescence; this depending solely on the slower or more speedy return of the diseased organ to its normal state. The sole indication for bloodletting is, therefore, the necessity of subduing dangerous symptoms, whose occurrence has a determinate relation to the amount of blood, and exceptionally, in cases where experience has shown that troublesome symptoms may be thereby relieved; but in such cases the individuality of the patient must be carefully kept in mind. Venesection is always to be avoided in feeble persons, and in attacks which are apt to recur (as hysteria and hypochondria).

(c) CHRONIC DISEASES.

ART. 14.—*On general enlargement of the lymphatic glands.* By (1) Dr. WILKS, (2) Mr. WITTEN, and (3) Dr. WUNDERLICH.

(*Medical Times and Gazette*, March 19, May 14, and July 9, 1859.)

1. Dr. Wilks's communication was made to the Pathological Society, and the account of it is very brief. The first notice of this affection, we are informed, is to be met with in the 17th vol. of the Transactions of the Medical and Chirurgical Society, where numerous cases of it are related by Dr. Hodgkin, and in a paper by himself in the Guy's Hospital Reports, where some other instances are recorded. The disease is manifested by an immense enlargement of the lymphatic glands,

especially those in the mediastina and lumbar region, but very often including those in groin and neck, and at the same time the spleen is much enlarged and contains some white deposit. These glands, when cut, are uniform in structure, translucent, and tough, and consist of a combination of an albuminous or lardaceous matter, with a fibroid tissue; and the same in the spleen: the other organs may sometimes contain a small amount of the same deposit. The symptoms attending the disease are extreme anemia and dropsy, death occurring from exhaustion. In some cases tubercle has been present, and in others the organs have been lardaceous or waxy, showing its close affinity to these two other morbid conditions. Dr. Wilks exhibited, at the Pathological Society, some specimens which came from a lad, æt. 18, who died in Guy's Hospital, under Dr. Pavy's care, with the above-named symptoms, dropsy, extreme anemia, and great enlargement of the glands in the neck. In this case, after death, the glands in mediastinum and abdomen were found similarly affected; the spleen was of great size, and had, scattered through it, a number of white deposits. The structure of the gland was almost entirely nucleated fibre, and the same was the composition of the material in the spleen. The liver and kidneys, on microscopic examination, also showed a small quantity of the same nucleated fibre in various parts of the tissue.

2. *Dr. Witten's case.*

Valentino Pedroli, an Italian, aged 16 years, was the subject of enlargement of the submaxillary, the parotidean, and mastoidean glands, on the right side, one year ago: two weeks afterwards the corresponding glands on the opposite side became similarly affected; about a fortnight afterwards those in both axillæ became spontaneously enlarged, extending from thence within ten days to those below the clavicles; and lastly, affecting the inguinal and femoral, on both sides, about the same time—the whole affection taking about three months for its full development. My patient sought advice in the City at about the fourth month from the first appearance of those glands situated near the mastoid region. He was ordered iodide of potassium internally, and the iodide of potassium ointment externally, and also the application of the tincture of iodine. This treatment was continued for the space of seven months, with but little alteration in the size of the glands.

It was noticed by the friends of the boy that swellings about the face and axillæ were decidedly smaller monthly, when the moon was at its full, and rapidly became larger as soon as the moon had arrived at its last quarter. One month ago I was sent for to see him, as he was unable to go so far as from Clerkenwell to the City, and I found him suffering from general hypertrophy of all the superficial glands; and, moreover, from his difficulty in breathing, and the suffused eyeballs and congested look of his countenance from impeded circulation, it was evident that the diseased action had extended to the deeper-seated glands, implicating those in proximity with the larynx and bronchi. He had recurrent bleeding from the nose; his tongue was clean; pulse accelerated between 80 and 96—during the last month of his existence, small and weak. The secretions were normal, although diminished in quantity, with the exception of the saliva, which was greatly increased. Appetite good. Sleeps well.

Mr. Bateman saw him with me in consultation, and confirmed my observations as to the nature of the affection; he advised a continuation of the iodide of potassium internally, and friction with the iodide of cadmium ointment ex-

ternally, over the enlarged glands; there was marked decrease of the size of glands, but the breathing was not much benefited. Three days before death, he vomited at least a pint of arterial blood, and gradually sank from dyspnœa and exhaustion. I regret to say that an autopsy was not permitted me, as his parents were then residing in Italy, and the friends resisted every effort I made to procure an examination. The most interesting features about this case are—the extension of the disease from the upper to the lower extremities in so short a time, the monthly alteration in the size of the external glands, the bleeding from the nose recurring principally when the glands were apparently at their largest size. I have noticed more than once with females suffering from bronchocele, that the tumour becomes larger as the period for menstruation arrives, and decreases after that state has passed by; a similar analogy stamps the interest of this case, for the boy was in appearance effeminate.

3. *Dr. Wunderlich's cases.*

1. C. L., æt. 22, a publican, was admitted into the hospital on August 28. Until February he had always enjoyed good health; but then, apparently as a consequence of cold, the glands of the axillæ swelled to a large size; and a month or two afterwards the cervical and inguinal glands enlarged, and a tumour projected from the upper part of the sternum. He was considerably emaciated; the skin was dry, and partly occupied with prurigo, and there were physical signs of the existence of phthisis. An immense number of enlarged glands, varying in size from a pea to a walnut, were observed in both the cervical regions, the supra-clavicular hollows, and at the nape. Under the right clavicle and at the right nipple, they varied from the size of a bean to a hazel-nut; while in the left axillary region a conglomeration as large as a fœtal head existed, soft in some parts, and hard in others, and having portions of the skin adherent. Under the pectoralis and along the arm were several swellings as large as nuts. In the left axilla a lump as large as an apple existed, having several smaller swellings near it. In the inguinal region there were small, hard enlargements. Under the use of iodine, cod-liver oil, and good diet, his chest symptoms improved for a while, and his weight increased; but the improvement was only temporary, and he died on November 10,—new swellings of glands having of late appeared close to the old ones, while the latter underwent an increase of size, especially such of them as had been touched with iodine. At the autopsy there was found to be enlargement of almost all the lymphatic glands of the surface of the body, varying usually from a nut to an egg in size, and exhibiting in section a bacony (*speckartige*) consistency, a yellowish-red colour, and but little juice. On the sternum there was so hard a mass that during life it was believed to be a displacement of one of the bones. The xiphoid process and attachments of the ribs were surrounded by similar swellings. The whole mediastinum was filled by a similar mass, and the lungs and heart were thrust backwards. The latter organ was normal, and the capacity of the great vessels was not intrenched upon. The lungs exhibited tubercles in various stages. Professor Wunderlich describes the microscopical character of the glands at great length.

2. A. H., æt. 32, maid-servant, had enjoyed good health until August, 1853, when, without obvious cause, the menstruation ceased, and soon after swelling of the cervical glands commenced, which was somewhat reduced by pencilling with iodine. She soon afterwards became pallid and emaciated, and suffered from night-sweats. In May, 1854, pain in the region of the spleen set in, and continued at intervals. In June the glands in both axillæ, the bend of the elbow, and the popliteal space, became enlarged. On her admission, July 27, the emaciation was considerable; enlarged glands of various sizes were ob-

served in the most different parts of the body; there was some pain in the region of the spleen, but no fever until some time after her admission. This again diminished in September, but the enlarged glands increased in number, and the spleen became much larger. On October 2d she died, worn out. At the autopsy the enlarged glands at the surface were found to be very numerous. Large packets occupied the mediastinum, the exterior of the bronchi, and various situations within the cavity of the abdomen. No tubercles were found in the almost bloodless lungs. The spleen was more than doubled in size, arising from the deposit of a yellowish-red mass, which, both to the eye and to the microscope, presented an exact resemblance to the substance of the swollen glands.

The most remarkable circumstance in both of these cases was the enormous enlargement of such great numbers of lymphatic glands. To such an extent had they increased, that they not only disfigured the form of the body, but from want of space to develope in, became themselves squeezed and flattened into various shapes. The change which the glands had undergone was in nowise of a carcinomatous or of a tuberculous nature; but consisted in an enormous hypertrophy produced with great rapidity, a portion of the nutritive material being deposited in an amorphous condition in the hypertrophied gland. The increase of the peculiar glandular parenchyma was less in the second than in the first case, there being in the former a good deal of coagulated fibrin, and infiltration of incompletely organised matter. The change observed in the spleen is, as far as the author is aware, peculiar and hitherto undescribed. To the unaided eye it most resembled innumerable points of suppuration, save that it was nowhere soft and fluidiform, but, on the contrary, very firm, and almost of cartilaginous hardness. Exactly the same change, but in far less numerous spots, was observed in the liver. The resemblance of this infiltration with the condition of the swollen lymphatic glands, leads to the inference of both being due to a common constitutional affection; and it might be indicated as spleen or liver scrofula. The causes of the affection were discoverable in neither case. The glandular swellings were not secondary to a peripheric affection. They must be regarded as an idiopathic affection; as the expression, in fact, of a constitutional disease. Both patients were excessively pale, which, together with the enlargement of the glands, and in one case the enlarged spleen, gave rise to the suspicion of leucœmia. Repeated microscopic examination of the blood did not confirm this. Little or no pain accompanied the affection. The glands caused inconvenience chiefly from their size; but their pressure being on all sides, they encroached but little on the capacity of the vessels. The heart and lungs were interfered with by the mediastinal glands. There was a slight peripheric œdema. The general condition exhibited extreme anæmia. Fever was only temporarily present, and never assumed the character of hectic. The patients sank under the increasing loss of power.

Art. 15.—*Coincidence of cancer and tubercle.* By Dr. Coote, Assistant-Physician to the Middlesex Hospital.

(*Medical Times and Gazette*, Oct. 15, 1859.)

Although it is now well known that cancer and tubercle may coexist in the same individual, yet the coincidence is of sufficient rarity to render it desirable to accumulate instances.

F. G., æt. 60, a "painter's jobber," was admitted into the Middlesex Hospital on the 10th of August, 1858, under the care of Dr. Goodfellow, to

whose kindness I am indebted for the notes taken during life, and which add so greatly to the interest of the post-mortem examination.

When admitted, the man was emaciated, pallid, with dropsical legs, and complaining of a "troublesome cough, worse at night." His then illness was of eight or nine weeks' standing; but he had been ailing long before.

There was "dulness on percussion over the apex of each lung, limited in extent, but greater on the left than on the right side; slight bronchial respiration and increased vocal resonance."

On the next day, attention was drawn to the abdomen, where was detected "an irregularly circumscribed, indurated tumour; slightly moveable by change of posture; extending from the umbilicus to about three inches upwards and to the left." He complained of some pain in this spot, which, however, was relieved by a dose of castor oil, and which never returned. This tumour was supposed to be malignant; and from its situation and from the absence of any symptom referable to the stomach or the liver, Dr. Goodfellow came to the conclusion that it was situated in the omentum, and probably involved a portion of the transverse colon.

From this time until the man's death (which took place on the 20th October from exhaustion and general dropsy), no change of any moment occurred. He retained throughout an excellent appetite, and was placed successively on broth diet, fish diet, and ordinary diet; he then had milk diet with a chop; and was particularly fond of gruel, of which he ate largely on the day of his death. During all this time he never once vomited, nor complained (after the castor oil) of pain in the abdomen.

I extract from my own notes such portions of the autopsy as bear upon the chief points of the case.

Right lung: pleura adherent at posterior part of the upper lobe. The adhesions, easily broken down, consisted of recent lymph, and of a number of minute whitish granulations, about as large as pins' heads. Both the upper lobes were highly congested, but floated in water. The lower lobe was of a deep violet colour, very friable, and sinking in water.

The left lung was small, pale, collapsed, free from pleural adhesions. On section, the upper lobe was found to be profusely studded with gray miliary tubercles interspersed with a large amount of pigment. Among these was a much smaller proportion of yellow tubercles; and of these some had undergone softening, leaving small cavities, none larger than a pea. The lower lobe was emphysematous.

Under the microscope these tubercles presented the usual elements; small, shrivelled, angular nuclei, microscopic granules, and (in the yellow tubercles) fat.

The abdomen being opened, on the anterior surface of the right lobe of the liver, just beneath the ensiform cartilage, appeared a solid mass of a yellow colour, as large as a walnut, and with an ulcerating surface. In other parts of the liver were numerous similar masses, varying in size from that of a pea to that of a pigeon's egg.

The stomach (which was firmly adherent to the liver, to the spleen, and to the transverse colon) was of normal size. Its walls, with the exception of the extreme fundus, and the pylorus itself, consisted of a hard unyielding substance, about three quarters of an inch in thickness, the internal surface of which was in a state of uniform ulceration. On section this structure was found to occupy all the coats of the stomach, except the peritoneal, which was unaffected. The extreme portion of the fundus appeared quite healthy The œsophagus was healthy.

These structures were examined microscopically.

The yellow masses in the liver consisted essentially of large nuclei containing one or two very large, and very distinct, nucleoli. With these were many polygonal cells in various stages of degeneration.

The structure occupying the walls of the stomach presented to the naked eye a grayish translucent substance, interspersed with small opaque masses of a yellow colour. The former consisted of a loosely reticulated fibrous stroma containing nuclei exactly resembling those described above, microscopic granules, and a few rather small cells containing large nuclei. The opaque yellow substance consisted of microscopic granules (very numerous), of fat, and of structureless corpuscles not distinguishable from colloid.

The intestines were quite normal, except where the transverse colon was adherent to the anterior wall of the stomach; at which spot it was contracted to the extent of half its diameter.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 16.—*On Coup-de-soleil in India.*

By Dr. W. SIMPSON, Surgeon to Her Majesty's 71st Regiment.

(*Trans. of Medical and Physical Society of Bombay*, No. 4, New Series, 1859.)

The chances, the symptoms, the post-mortem appearances, and the proper treatment of sun-stroke, are all ably illustrated in this paper.

"The average strength of the 71st Regiment during the months of May, June, and July, 1858 was 417 non-commissioned officers, rank and file; 89 cases of sun-stroke occurred between the 5th of May and the 15th of August, of which number 26 died; 13 suddenly, either on the line of march, in the field, while engaged with the enemy, or in camp; and the remaining 13 died in Hospital. The men composing the regiment arrived at Bombay from the Mediterranean on the 6th of February, 1858, and in the latter part of the same month proceeded by bullock train to Mhow. On the 29th March they left Mhow, *en route* to Jhansi, and joined the C. I. F. Force at Goonah on the 5th May, having marched the whole way from Mhow. The regiment arrived at Jhansi on the morning of the 2d of May, and there was little or no sickness till this date; the men, however, were becoming exhausted from long marches, that were made during the previous four nights, and they obtained no rest in Jhansi, but proceeded to Chirgong the same night (2d May) at 10 o'clock, a distance of 18 miles; from Chirgong to Moote, a distance of 16 miles, they also proceeded on the following night. These long marches produced much exhaustion, and, in a great measure, accounted for the numerous cases of sun-stroke that occurred at Koonch on the 7th May, and on various future occasions.

"*Symptoms.*—The following symptoms were invariably present: an intensely hot, dry skin, which lasted till even after death in those that died within 12 or 16 hours; a sense of constriction of the chest and

laboured breathing, with a feeling of a heavy weight just below the ensiform cartilage. Great prostration of strength, accompanied very frequently with inability to answer questions without weeping (the strongest and most robust were not exempt from these symptoms); a tumultuous action of the heart, with strong pulsation of the carotids; pulse varied much, but was never full and hard; headache referred more particularly to the summit of the head, conjunctivæ injected, pupils acted to the stimulus of light, unless during convulsions, or during the stage of coma, when they were fixed and contracted. In several instances, however, they became suddenly dilated for a few minutes, after being fixed and contracted to a point. Countenance generally pale at the commencement, but in those cases of a severe character, or that had a fatal termination, it assumed a leaden hue; the urine was never entirely suppressed, but it passed off involuntarily drop by drop; bowels were generally costive, though several cases occurred the bowels being quite natural in every respect. There was also a great desire to sleep, so much so that if not checked at first, it passed into coma, which almost invariably terminated in death. Loud moaning during the stage of coma was also invariably present. Death either occurred from convulsions, most frequently of an epileptic character, or from coma. The symptoms, however, varied according to the severity of the attack, and the constitution or temperament of the patient. Death sometimes occurred almost instantaneously. One man just before arriving in camp at Banda (the regiment did not arrive on the encamping ground this day, 12th May, till after noon, and the thermometer was 120° Fah. in the tents), after a march of over 20 miles, fell down in the ranks, uttered a shriek, and expired in a few minutes. A man at Koonch, before the engagement with the rebels took place, fell asleep for a short time during a halt that occurred (the sun being fully two hours above the horizon), and on being roused up answered questions with difficulty, and he had lost the use of his limbs. Others again were seized with maniacal symptoms: a man at Calpee made a rush at the Hospital Bheestie and tore the mussuck from him, and on remonstrating with him I remarked he was quite deranged in his mind. After getting some water to drink (which he swallowed in a painfully ravenous manner), and having a quantity poured over his head and body from a height, he became quiet, and shed tears abundantly. Others again smiled and laughed (unnaturally) at one time, and at another became excited and alarmed if spoken to, and any attempt at deglutition brought on convulsions. In short, some of the cases presented symptoms of apoplexy, some of epilepsy, mania, and hysteria. The disease under consideration, when of a severe character, more closely resembles apoplexy or epilepsy (which often merges into apoplexy) than any other disease I am acquainted with. In many of the cases that came under my care, genuine epileptic convulsions ensued, lasting from five to ten minutes, with intervals of variable duration of perfect consciousness and rest. During the stage of coma the pupils were fixed and contracted, and the conjunctivæ injected, and there was loud moaning till a few minutes previous to dissolution taking place, which last symptom, however, I have never heard in pure cases of apoplexy that have come under my observation.

"*Post-mortem appearances.*—Time and opportunity did not allow of post-mortem examinations being made to any extent on the line of march, during the late campaign, when fatal cases of sun-stroke were of common occurrence, and those that were performed elucidated little or nothing regarding the nature of the disease; the only abnormal appearances were an excess of venous blood to a greater or less extent in the brain, and congestion of the lungs and liver. This want of balance of the circulation, taken in conjunction with the symptoms during life, induces me to believe that sun-stroke is attributable to the functions of all the organs that free the blood from those matters that are injurious to the system being either entirely or partially suspended, such as the lungs, liver, kidneys, and skin. The blood is not perfectly oxygenized in the lungs, the bowels as a rule are confined, and the healthy action of the liver is interrupted (this last statement is, I think, proved by the fact that those men who had severe attacks of sun-stroke have since suffered from derangement of the liver). The kidneys evidently do not perform properly their functions: the urine is not suppressed, but it is passed involuntarily drop by drop, and in diminished quantity. The skin is pungently hot, dry, and harsh (every man seized with sun-stroke, and who could answer questions, informed me that he had not perspired for a greater or less extent of time, sometimes not for days, previous to being attacked, and that he had enjoyed good health as long as he perspired, but that on the perspiration being checked he felt dull and listless, and unable to take much exertion without making a great effort). No doubt this state of the body is attributable to the nervous system being over-stimulated by exposure to the sun, more particularly when the thermometer ranges from 110° to 120° Fah. (which was too often the case in the tents occupied by the men during the day in May, June, and July), together with extreme exhaustion from long-continued exertion and want of rest.

"*Treatment.*—The chief point in the treatment, in my opinion, is to rouse the nervous energy, which is most effectually accomplished by pouring cold water from a height over the head and nape of neck, and dashing the same in the face and over the chest, and this should be persevered in as long as there is any tendency to sleep or to coma; at the same time the patient should be roused up by speaking to him, and, if necessary, by shaking him. As soon as he can swallow, brandy or wine and ammonia should be given in liberal quantities, and frequently repeated; and calomel and croton oil administered, to act on the liver, and move the bowels. The most distressing symptoms a man labouring under this disease complains of are—a sense of suffocation—and a dead weight at the *scrobiculus cordis*. I have found that rubbing for some time turpentine over the chest and stomach affords the most effectual relief. These remedies, together with stimulant enemata and mustard cataplasms to the legs, are more likely to prove successful than any I am aware of. The after-treatment consists of nourishment and stimulants, such as arrowroot, beef-tea, wine or brandy and ammonia, together with cold applications to the head, blisters to nape of neck, and acting on the liver and bowels. Bleeding, either locally or generally, is inadmissible, more particularly

if there is exhaustion from previous exertion. No patient can be considered out of danger till the skin becomes cool and moist."

Art. 17.—*On the efficacy of cold affusion to the head in narcotism.* By Dr. A. Reeves Jackson.

(*Amer. Journ. Med. Sciences*, July, 1859.)

In the first two cases the narcotism was from opium; in the third from belladonna.

Case 1.—On the 6th of March I was called in haste, by an Irish labourer who lived about one mile from this place, to see his son, a child eight months old. The father told me that the child was "clean dead," and "kilt entirely," when he left home; but was unable to give me any further information. On arriving at the place, I found the little patient in such a condition as almost to justify the father's expression.

Lying on the lap of its mother, its face was of a deathly pallid hue; the breathing slow, interrupted, gasping; the extremities were cold, and the skin covered with a clammy perspiration. The pulse at the wrist was barely perceptible in its feeble, thread-like beat.

I learned from the mother that she had been in the habit of administering to the child the preparation of opium known as *Godfrey's cordial* to make it sleep; and that having occasion to go to the village where she expected to be absent some length of time, she gave it, before starting, a *little more* than usual, in order that it might sleep until she returned. The quantity given on this occasion, she said, was about two teaspoonfuls, but as she made this admission with great reluctance, it was probably much greater. She was absent three hours, and when she returned the child was sleeping soundly, and she made no effort to arouse it until nearly an hour afterwards, when observing that it was unusually pale, she made an attempt to awaken it, but found it impossible to do so.

Five hours had now elapsed since the dose was administered. It was evident that the child was rapidly sinking, and that unless relief was quickly had, it would soon die. The stupor was so great that emetics could not be given—nothing could be swallowed. I had no stomach-pump at hand, and there was no time to send for one; beside which, these means could not *rouse the patient*, which was to my mind the prime indication. I remembered that cold affusion to the head had been used successfully in some published instances, and I determined to give it a trial, although without the slightest expectation that it could be of any avail in this case.

Accordingly I ordered the father to procure a bucketful of cold water, and having the head of the child held over it, face downwards, filled a coffee-pot (they had no pitcher) and poured from it a steady stream upon the occiput in such a manner that the water ran off into the bucket beneath.

I had poured on two or three gallons in this manner, when suddenly I was startled by the child making a long, gasping inspiration, accompanied by a convulsive movement of the arms. My first impression was that it was dying. Raising its head, however, I saw that its eyes were open, and that its breathing was rather better than before the treatment was commenced. The eyes were almost immediately closed again, and somewhat encouraged, I again poured on the water as before. In a very few minutes the child began to moan, and the breathing became more distinct; continuing the use of this remedy a few moments longer, it uttered a feeble cry.

I now desisted for a time, with a view of administering a solution of sul-

phate of zinc in warm mustard-water, but during the time occupied in preparing it the child relapsed into such a stupor that it was found impossible to rouse it by ordinary means sufficiently to enable it to swallow.

I again had recourse to the cold water, and with the same happy effect as before. In a very short time the child was once more roused to susceptibility, and cried out quite lustily. We now forced it to take a few doses of the emetic, which, aided by tickling the fauces, produced free emesis in half an hour. The matter vomited gave but little evidence, however, of the presence of the medicine.

Very little subsequent treatment was necessary. I ordered that small quantities of wine-whey should be given occasionally, and that frictions to the lower extremities be made with warm infusion of mustard, to obviate the resulting debility. In two or three days the child seemed to have regained its usual health.

Case 2.—James H—, æt. 19, a blacksmith's apprentice, had been subject to neuralgia of the face, for the relief of which he used the camphorated tincture of opium, or paregoric elixir. About the middle of February, 1857, being attacked with the disease, and not having any of his customary remedy at the time, he procured from a neighbour a vial of laudanum, and being under the impression that the doses of the two articles were the same, he poured out a large tablespoonful and drank it. This occurred at ten o'clock in the forenoon. In a few minutes he began to feel drowsy, and went to bed. About four o'clock p.m., one of the members of the family went up stairs for some purpose, and found him in what was supposed to be a dying condition. A messenger was immediately dispatched for medical assistance, and the writer was summoned to see the case.

I reached the bedside of the patient about five o'clock—seven hours after he had taken the medicine—and learned the above particulars.

He was then under the full poisonous effects of opium. His surface was cold and clammy; his breathing irregular, slow, and stertorous—respirations eight in the minute; the pulse full, slow, and very irregular; the pupils were tightly contracted and totally insensible to light; the countenance calm and pale.

I at once endeavoured to rouse him by speaking to him in a loud voice, by roughly shaking him, and by striking him smart blows with the open palm. These failing, we took him from the bed with the intention of moving him about the apartment between two assistants, but he was unable to bear the slightest amount of weight on his limbs. We then placed him on the bed again, and commenced beating the soles of his feet with wet towels. This also failed to elicit the least token of sensibility. I then dashed cold water in the face, hoping that I might rouse him sufficiently to enable him to swallow an emetic, although I thought it improbable that any of the poison still remained in the stomach. Although this caused him to start, and move his hands towards his face, yet as soon as the dashing of the water ceased, he at once became insensible again.

I now concluded to use cold affusion to the head; and having everything properly arranged, commenced pouring the water upon the head from a large pitcher held at a height of about eighteen inches. The effect appeared almost magical. Before the pitcher was emptied he opened his eyes, and evinced by his actions that the treatment was unpleasant. It was continued, however, and in a short time he was fully aroused. Nausea and vomiting now supervened, and the retching was so violent and long-continued, that all remaining symptoms of drowsiness were banished. A cup of strong coffee finally checked this and completed the cure.

Case 3.—Mrs. H—, the wife of a clergyman, had been suffering several days with severe neuralgia of the rectum, caused by the irritation of internal hæmorrhoids. I had been using a great variety of remedies, but as is usual in such cases, none produced more than temporary relief.

On the evening of May 7th, 1858, the pain was unusually intense, and I ordered a suppository containing one third of a grain of Sulph. Morph. This gave almost entire relief from the pain, and she passed a tolerably comfortable night. Next morning, however, she awoke with headache, an intolerable itching, and nausea and vomiting, which continued throughout the day, and she positively refused to use opium in any form again. In the evening the pain returned as severely as before. I ordered the bowel to be cleansed by a laxative enema, to be followed by an injection consisting of a watery solution of extract of belladonna. I used the Shaker preparation, and laid out a portion containing about one grain, directing that it be dissolved in two ounces of water, and thrown into the rectum and retained there.

About midnight I was hastily called to see the lady, and on my arrival found her surrounded by her friends, who were greatly alarmed at her condition. She was lying on her back in bed, completely insensible. The face was of a bright-red colour, and somewhat swollen; the breathing slow and quiet, entirely without stertor; pulse 130, small and hard. The eyelids were closed. On separating them the globe appeared injected and prominent; the pupils were widely dilated and directed forward with a fixed vacant gaze. The patient appeared entirely unconscious, although she occasionally made an apparently painful attempt to speak. The muscles of the face, particularly about the mouth, moved convulsively. The arms were also slightly convulsed. The skin was warm and perspiring abundantly.

The husband informed me that inasmuch as the anodyne enema I had ordered had failed to allay the pain, he thought best to repeat it, and did so in *one hour* after giving the first. He said he had used a piece of the extract about the size of a *pea*, that he thought it was about the same size as the portion I had used. He further stated that in a short time after using it, the patient complained of feeling very warm, of some derangement of the head, and of an unquenchable dryness of the mouth and throat, with difficulty of swallowing. She also complained of confusion of vision, of giddiness, and of headache of a beating, throbbing character. These symptoms were followed by a light, good-natured delirium, a wandering loquacity, and extravagant, ridiculous actions, together with occasional nausea without vomiting, and ineffectual attempts to urinate.

Various means were used to rouse her without effect. Ammonia was cautiously applied to the nostrils; she was spoken to in a loud voice and roughly shaken, but "still she slept."

My first object was to remove any of the poison that might yet remain in the bowel; and for this purpose I ordered a large enema of thin gruel. After this had been administered I had preparations made for using the cold water. A large tub was placed on the floor near the side of the bed, and the patient being placed crosswise on the latter, with the head and shoulders projecting, and supported by an assistant, I commenced pouring a steady stream upon the back part of the head and neck. In a few minutes she opened her eyes, but reclosed them immediately. The face became gradually paler. In about five minutes she made an attempt to articulate, and pointed towards her mouth. Some water was put into her mouth, but she could not swallow it.

The use of the cold affusion was now suspended, as the patient appeared to be cold and shivering. She was placed in bed and lightly covered. In the

course of ten or fifteen minutes her skin became hot, the face was flushed, and she again fell into a profound sleep. Once more the cold water was employed, and soon she again became conscious. A piece of ice was now placed in her mouth, and appeared to afford her much relief, although she could not articulate with sufficient distinctness to be understood.

The enema was now returned without any admixture of fæces, but containing a considerable quantity of the belladonna, as was made evident both by the colour and odour of the discharge.

The patient, although drowsy for some hours, recovered without the use of any other remedy.

Her vision remained dim and confused about three weeks.

Art. 18.—*Cases of Aneurism of the Cerebral vessels.* By Dr. Gull, Physician to Guy's Hospital, &c.

(*Guy's Hospital Reports*, Third Series, vol. v, 1859.)

This paper is a valuable contribution to the literature of the subject. It contains synopses of the symptoms in twelve cases of aneurism of the basilar artery, in six cases of aneurism of the middle cerebral artery, and in six cases of aneurism of the anterior cerebral artery in the substance of the hemisphere. Dr. Gull also gives six other cases in detail. The result of the whole is to confirm us in the belief that, "although we may from the circumstances sometimes suspect the presence of aneurism within the cranium, we have, at the best, no symptoms upon which to ground more than a probable diagnosis."

Art. 19.—*On phosphatic urinary deposits in over-worked brain.* By Dr. Parkes, Physician to University College, London.

(*Montreal Medical Journal*, May, 1859.)

"In all ordinary febrile diseases," says Dr. Parkes, in a clinical lecture recently delivered, "the curious fact has been made out, and now verified over and over again, that the chlorides disappear from the urine. Various arguments and explanations go to show that this absence or disappearance is an actual 'retention' of the chlorides; thus in typhoid fever, in one case, we had an entire absence of chlorides; so it is also often in rheumatism. The immediate pathological cause of this is still unknown. An absolute want of chlorides or chlorine is perceptible in a most marked manner in pneumonia. This diminution advances or commences early with the period of hepatization, and goes on for days; we always look upon it as a favorable symptom, as it is sure to be, when the chlorides make their appearance again in the urine in such cases; the chlorides, in fact, are increased as the urea is increased, and this is tantamount to saying—as the normal physiological changes in the body supersede the diseased changes or actions set up by the pneumonia, or capillary bronchitis, for it is the same as regards this phenomenon in both diseases.

"Now it is a curious fact, also, that there are two or three diseases of a

rather striking character in themselves, and in these the chlorides are enormously increased. One of these diseases is ague—the chlorides increase during the cold fit, and go on to increase as well as the urea. The other disease is dropsy, with great diuresis. Here 500 or 600 grains of chlorides a day (three times the normal amount) will be given off. The chlorides are all increased very much in the disease known under the name of *diabetes insipidus.* We have had frequent opportunities, and shall have again, to refer to these curious facts in some other of these clinical lectures.

"The next constituent of the urine that I wish to draw your attention to is the phosphoric acid, or phosphates, given off in disease and in health.

"Now you will do well to remember that of the phosphoric acid contained in the urinary secretion, one third to one half, though no doubt it has some special function to perform in the system, is obtained directly from the food. If patients suffer from insufficient food, as amongst children badly nursed, or our Poor-law patients and dispensary patients, then the phosphoric acid in the urine is diminished or disappears nearly altogether. The phosphoric acid in the urine usually exists in combination as acid phosphate with potash, sometimes with soda, lime, and magnesia, but not with ammonia. You know already that there is a large amount of phosphate of magnesia in common bread, also in meat; but this, as well as phosphate of lime, requires acids in the stomach to dissolve it. You know, also, the old distinction of alkaline and earthy phosphates in the urine; the proportion of these are as five to one, and the total amount of phosphate for an adult may vary, so much as from a drachm and a half to five drachms, given off in the urine, but depending in a great measure on the quantity and character of the food.

"The phosphoric acid, on the opposite hand, formed in the system itself, comes directly from the disintegration of certain tissues in the body, such as the disintegration of nerve-tissues in particular; and this brings us to the consideration of a most important subject—the phosphoric acid formed in nervous or convulsive diseases from the exercise of the brain and nerves; and I may also add, from the disintegration also of muscular tissues; but before we come to that subject I may say a few words to make more clear what I mean by phosphatic deposits, and I may begin by saying that what one reads even yet in what are thought to be 'standard books,' as the phosphatic diathesis in patients, is altogether a mistake, there is no such thing as this diathesis. But if we place some urine, which is feebly acid, over the flame of a spirit lamp, and boil it, a change takes place in some remote manner, like what is seen in what is called the phosphatic diathesis. The neutral phosphate of lime is divided into two parts—a basic phosphate is thrown down and an acid phosphate remains in solution. The same occurs in the magnesia phosphatic salt; these basic compounds fall down, but on the urine standing, they partly redissolve again. It is said, as a theory to explain the change, carbonic acid is driven off by the boiling, or urea decomposed; but be this as it may, the fact of the decomposition is enough for us, in a clinical point of view; the subject is indeed of very great im-

portance to men, especially in surgical practice, where this so-called phosphatic diathesis is often encountered from disease of prostate, or diseased mucous membrane of the bladder from stone. A deposit of mucus in the urine will lead to such deposit of phosphates, by the mucus decomposing urea. The prolonged exhibition of alkaline remedies may also induce a deposit of phosphates. It has been even said, and is practically held to be true by surgeons, that the mucous membrane of the bladder itself has the power of forming phosphatic deposits. The surgeon's finger in lithotomy will occasionally feel a coating of phosphates; but I don't know that this point has been sufficiently studied to decide whether this is a phosphatic deposit.

"Now, as to this often vexed question or hypothesis of prolonged action of brain or nerve-tissues being invariably followed by disintegration of nerve-cells and deposits of phosphates in the urine, though a very fashionable theory, I think the evidence is not at all decisive one way or the other. It is still a moot point on the confines of psychological science. You will perceive from what I have just stated that many circumstances, such as deranged health, excessive use of alkalies, prostatic disease after fifty years of age, &c., may lead to deposits of phosphates in the urine. Now I need not say that prolonged mental work, or over-excitement of the brain, will lead to impaired health; the urine then becomes alkaline. I believe that after severe mental labour, such as that of reading up for University honours, a deposit of earthy phosphates in undue amount appears in the urine. I very much doubt, however, if it be solely from distintegration of nerve or brain-tissues, but from the constitution of the urine, as I pointed out a few minutes ago, being altered. In diseases where we have delirium, it is said also that we find excess of phosphoric acid in the urine. These physical or psychological reactions of the mind over the body are, no doubt, too much neglected at present; the question, in fact, may be said to be still *sub lite*, or 'not proven.' There is no doubt that emotions of various kinds react also on the nervous system. And it is strongly insisted that in chorea, which is very often the result of simple fright or emotion reacting on particular parts of the brain and nervous system, there you have large deposits of phosphoric acid in the urine. If the fact be really a fact, as it is stated to be, it is one of the great interest.

"All I can say is, that a very reliable authority, Voegel, has examined the subject in over a thousand cases of this kind and of meningitis, with all the resources of the most accurate chemistry to furnish him with quantitative analyses of the phosphates in the urine, but at the end of his most laborious researches he is unwilling to commit himself one way or the other, to any opinion on the subject! There is, no doubt, something in these finer mental actions, which, though they may produce death by 'shock,' or may produce such formidable symptoms as those of chorea, hysteria, epilepsy, &c., still may not be measured by the chemical balance. But at the same time I feel it right to tell you that both in America, in Germany, and France, the discovery of phosphate in the urine, after inflammation of the brain or nervous excitement engaging the brain-material, has been strongly insisted upon as an actual fact.

"In rickets, according to the excellent authority of Lehmann, the phosphates are decidedly increased in the urine, as also in tuberculosis; this latter fact agrees with the view now generally entertained that in the process of cell-formation the most essential inorganic element is phosphorus in some of its forms or combinations. It is said oxalic acid is sometimes found, and carries off the earthy phosphates in rickets, &c.; no doubt there is a coincidence of the two generally in the urine in such cases as I speak of, but still phosphate of lime is not soluble in oxalic acid. Phosphate of lime as well as phosphate of magnesia, as found in the urine, it is well to recollect are in the condition of amorphous powders, while the ammoniaco-magnesia phosphate is in crystals. If you wish to be correct, I think it is as well you should take particular note of this, as some of the class-books may mislead you.

"There are fallacies of 20 per cent., even in the best-concerted plans of estimating the phosphates, so that we are as yet only at the threshold of the inquiry; but I would advise pupils to make themselves familiar with these 'Volumetric methods' of Liebig, which are very ingenious: and as regards the phosphates the 'Volumetric' plan is the best we have.

"There is no doubt that the phosphates are very much influenced by food and exercise, as already referred to; then, again, they are diminished in amount by such affections as diarrhœa, by which phosphates are passed off with half-digested food, these phosphates having never entered the blood of all. The study of the phosphates is yet in its infancy, and how phosphoric acid acts in combination with iron and lime, or in cod-liver oil, in building up nervous tissues in process of 'wear and tear,' or how it acts in such diseases as rickets, chorea, epilepsy is altogether a very new and very instructive subject of clinical research."

ART. 20.—*The cerebro-spinal symptomatology of Worms, especially Tape-worms.* By Dr. T. P. HESLOP, Professor of Medicine in Queen's College, Birmingham.

(*Dublin Quarterly Journal of Medical Science*, May and August, 1859.)

Dr. Heslop's essay on this subject is of a very elaborate character. Fifty cases are given in detail. The views of other writers are fully stated. The conclusion is, that the cerebro-spinal disturbance caused by worms has been much under-rated.

"Now, I venture to think," says Dr. Heslop, "that there is an arrangement of symptoms in most cases of worms, and more especially in tape-worm, which ought to direct us to the question, Has the patient worms? and, failing a satisfactory reply to this question, should compel us to take the requisite means to arrive at one. I have too often given evidence of my views on this matter in the course of this paper, to render it now necessary to make a detailed exposition of all the symptoms which more or less cogently suggest to the mind the

presence of worms, and the fifty cases I have reported are sufficiently explicit as regards my main object. Those who pay an exclusive attention to the digestive disturbances, to the itching of the nose and anus, the foul breath, the varying appetite, will be often right in their diagnostic efforts, whether affirmative or negative, when they have to deal with infantile life, or with the round and thread-worm; but will be very rarely indeed led to a sound conclusion, when their inquiries refer to adult life and to the tape-worm; and this, too, whether in the affirmative or the negative direction. For such troubles are frequently but little marked in tape-worm, and, when present, are wanting in value unless associated with other phenomena. It is in disturbances of the nervous system, associated with these, that we find the best basis for a provisional diagnosis of tænia. When such disturbances, amounting often to convulsive movements of an epileptic form or hysterical character, especially when occurring in a man, coexist with signs of an abdominal disorder, as precisely laid down by Dr. Wood, the possible existence of the worm should be suspected. With this, in the main, Bamberger seems to agree. It should never be forgotten, that in the vast majority of cases of disease which come before us, cerebral disturbances are merely sympathetic;* and if these should be well marked, without fever, and with ill-defined, irregular, and alternating digestive troubles, the observer is bound to suspect a foreign body in the intestinal canal, and most probably a parasite.

I have had occasion often to allude to tremors, as occurring in tænia, and have marked the absence of mention of this symptom on the part of almost every author, including the eminently practical Heberden. This could have arisen only from the notion that the symptom is unimportant among so many more obtrusive nervous aberrations. But its frequency is note-worthy, and, in this respect, deserves to be placed after headache, giddiness, and accidents in the special senses. There is, however, another highly important reason for bestowing a peculiar attention upon the symptom. Tremor is a less common sign in all diseases than cephalalgia or giddiness. It is more frequently connected with a definite pathological basis, and apart from such basis rarely makes its appearance. Now, if a patient has not recently suffered from a severe or exhausting malady, is not obviously affected with some metallic poison, shows no other indication of general paralysis, or paralysis agitans; and if, moreover, he is not

* Chomel has so wisely alluded to the point that I cannot refrain from quoting his remarks:—"We must first observe, in a general manner, that the two organs which are most ordinarily the seat of sympathetic phenomena are, less often than the other important viscera, the seat of the disease itself. Thus the disorders that we observe in the functions of the brain and of the heart, as cephalalgia, delirium, convulsions even, accceleration of the course of the blood, palpitations, syncope, have, in the great majority of cases, particularly in acute affections, their point of departure elsewhere than in the brain and heart. The great disturbances which supervene in the digestive and respiratory passages are, on the contrary, most commonly connected with diseases of these organs, or of the parts which concur with them in the accomplishment of the same functions. Thus, when I see a patient the subject of delirium, convulsions, a severe cephalalagia, I am induced to seek for their cause in distant organs before questioning the brain; as, in intense fever, I am led first to search its point of departure anywhere else than in the heart. ('Eléments de Pathologie Générale,' p. 484, par M. Chomel, fourth edition, Paris, 1856.

extravagantly addicted to alcohol or tobacco, we ought to look with great suspicion upon marked trembling of the limbs as probably indicative of worms in the intestinal canal. The semeiological value of this condition is enhanced by the circumstance that it is an objective state, one that cannot be concealed, and which, if simulated, could only deceive the ignorant. I now, in conclusion, place before the reader, in a summary manner, the conclusions at which I have arrived, and which appear to me fairly drawn from my cases.

"1. That in the great majority of cases of tape-worm, and, though with lesser frequency, in cases of other intestinal worms, more or less serious and peculiar nervous disturbances are apt to arise.

"2. That the most frequent of these are headache, giddiness, various troubles of the special senses, especially singing in the ears, flashes and dark spots before the eyes, imperfect amaurosis, and trembling of the limbs.

"3. That various anæsthetic, and, on the contrary, neuralgic phenomena, are very frequent, usually connected with general lassitude and sense of muscular feebleness.

"4. That, though less frequent than those previously cited, convulsive seizures, partaking of the nature of epilepsy or acute eclampsia, or sudden attacks of insensibility, mixed with syncope,* and, in the female sex, severe forms of hysteria, are also often directly traceable to worms.

"5. That the last symptoms (No. 4) are more common in childhood, and the earlier periods of life, than afterwards; and are more frequently caused by the round and thread-worm than by the tape-worm.

"6. That chorea does not appear to be often excited by the irritation of worms.

"7. That a feeble state of the general health generally accompanies the presence of worms; often, in cases of tænia, proceeding to marked anemia, so as even to lead to the suspicion of the possible existence of Bright's disease.

"8. That the irritation phenomena of the digestive tube, even when associated with various symptoms referred to the functions of that tract, do not warrant the diagnosis of the presence of tænia; and that their absence does not absolutely indicate the absence of the parasite.

"9. That the frequent appearance of the nervous symptoms above related, without a well-marked relation to any special lesion of the nervous system, especially if alternating with periods of perfect or nearly perfect freedom, should engender the suspicion that worms are present. If to those symptoms are added various ill-defined disturbances of the functions of assimilation, including occasional colicky pains, without marked vomiting, pain after food, or decided emaciation,—it is in the highest degree probable that worms are the source of the symptoms, and steps should be taken to obtain assurance of their existence, or the contrary.

"10. That it is probable that many of the sympathetic phenomena of vermination are connected, not with their direct irritation of the

* In this chapter on Lipothymia, Heberden says that "defectio animæ sæpe accedit lumbricis in puerili ætate."

mucous membrane, with which they are in relation, but with a general disorder of the system, partly resulting from the parasites, and partly the cause of their maintenance and development in the intestinal tract."

ART. 21.—*On Laryngotomy in Hydrophobia.* By Mr. SCRIVEN, First Assistant-Surgeon in the Presidency General Hospital, Calcutta.

(*Lancet*, April 23, 1859.)

It may be doubted, we think, whether the disorder in this case was true hydrophobia, and Mr. Scriven allows this doubt. It may be doubted, also, whether the operation was so positively beneficial as is supposed by the author. The case, however, is one of considerable interest, and we give it without abbreviation.

CASE.—J. M——, seaman, aged nineteen, admitted into the General Hospital, Calcutta, July 23d, 1858. On admission, had been one month in India, and was suffering from slight choleraic diarrhœa, which yielded to simple treatment, sulphuric acid, &c.

On August 8th, was recovering—in fact, feeling well, and expecting to go out on the morrow; but about eight p.m. was seized with a sudden feeling of "weakness, wind at stomach, and difficulty of breathing," while on the stairs, and was obliged to hold on by the balusters. The apothecary was sent for, and gave him a dose of peppermint, which was said to have relieved him temporarily. At a quarter to nine, however, I got a note to the effect that a patient in the ward was complaining "of choking." I went over at once, and found the man sitting on the bed, labouring for breath, yet taking deep sighs, and filling his lungs completely; in great distress, with small rapid pulse, perspiring profusely, crying out that he was dying for want of breath, and requesting me to do something for him immediately. Presently a decided spasm of the glottis came on, with crowing inspiration, like laryngismus stridulus in the child. I gave him a cup of tea, which he drank with apparent avidity, though at first he said it would choke him. A mustard plaster also was applied to the chest. After taking the tea he seemed somewhat relieved, having lost the crowing inspiration, but still labouring for breath as at first. In a very few seconds, however, the spasm and crowing returned, and were again apparently relieved by a draught of water. This was repeated three or four times, when, finding the relief only momentary, I sent for a mustard emetic (a teaspoonful of mustard and four ounces of water). This took a few minutes to prepare, during which I did nothing except try to pacify the patient, and feel the larynx, in order that I might be ready to perform laryngotomy if necessary. When the mustard emetic came he drank some of it, and then by a movement, apparently half convulsive, threw the cup containing the remainder of the liquid on the ground, and fell back upon his bed, unable to breathe from spasm of the glottis; there was now no crowing, for the glottis was completely closed. I had my penknife ready, and plunged its small blade into the larynx through the crico-thyroid membrane. The man was struggling so much at the time, that I only succeeded in making a small opening corresponding to the width of the blade, through which, however, the air whistled, and the spasm of the glottis, at least the distress consequent on it, was at once removed. Now he began to talk very fast and loud, and to express excessive fear of death, calling upon God to have mercy upon him, at

the same time struggling, so that it required about six men to hold him. By seizing opportunities, I gradually managed to enlarge the opening into the larynx by cutting through the cricoid cartilage, and to insert a quill, through which he breathed freely. He still continued talking in the same rapid way, and soon became decidedly incoherent, calling upon the devils to come and take him away, and inquiring what he had done "on this 19th day of June" to deserve such punishment. It was impossible to quiet him or arrest his attention; but any sudden movement or impression made him start and talk the louder, as when I placed my hand on the temples to feel the artery. I sent for a bag of water (a bheesty's mussick), and poured it on his head; but it had little or no effect, except to increase distress and excitement when the water went into his mouth. I tried to give him some brandy and water and some small lumps of ice; but they did not appear to do good, and the greater part of both he managed to spit out.

After this, about eleven p.m., I removed him to a quiet place, and the attendants ceased to hold him. He now struggled much less, but still continued to talk in the same strain, though less loudly, occasionally spitting out with apparent difficulty some viscid saliva. At this time his pulse was found small and wiry—160; skin hot, but moist; great sensibility of surface; he started even when touched. The abdomen seemed to be the most sensitive part. The pupils were dilated, and insensible to light. Respirations were principally thoracic. He had no movements which could be distinctly called involuntary; he swallowed a little brandy and water that was dropped into his mouth. He continued in this state for half an hour; after which, without evident cause, he became greatly excited, bawled so as to be heard all over the compound, and required to be held in bed by several men, at whom he spat frequently. Suddenly, it appears, he became sensible (about midnight). When spoken to by the wardmaster, he stood up to have his bed put to rights, and then lay down, took a little brandy and water, and went to sleep. He was awake at four o'clock on the morning of the 9th, when I went over to see him; quite cool and rational, but complaining of feeling very weak. I put a silver bent tube into the larynx, the quill having come out. He went to sleep again, and was comfortably sleeping when seen at six a.m. At half past eight he was awake; skin cool and moist; pulse 100, soft; respirations 28. Complained of weakness and difficulty of coughing from the opening in the windpipe; was perfectly collected, described the sensations which were premonitory of the attack, as given at the commencement of this history. He said he remembered the cut being made into his throat, but lost himself entirely very soon after; remembered the pain in his throat at the time of the operation, but did not know where he was, and was never in such a fright in his life.

The patient has only been twice on shore in India this time (he was out here last year), with the exception of coming to hospital. He is perfectly sure that no animal bit or licked him on those occasions, and there were no animals on board his ship. Was bitten by a dog on the inside of the right thigh nine years ago, and the dog was afterwards killed for biting people, but was not mad; was never bitten by any other animal, and never had a dog of his own but one, which he gave away when he went to sea four years ago. The cicatrices of wounds formed by two teeth are still distinctly visible. Ordered, sago diet; beef-tea, two pints; port wine, eight ounces.

Aug. 10th.—Seems pretty well; pulse 100, feeble. To have meat diet. Got the tube out yesterday evening, and did not breathe through the wound in the night, as the skin overlapped it. It was introduced again, and tied by strings placed round the neck. Particular inquiries were made to-day about

other possible causes of his symptoms. He never had epilepsy or paralysis. The glands of the neck are not enlarged, but there is one small superficial abscess just below the jaw, which, he says, he has had since he first got the cholera. Never had any laryngeal affection before, nor difficulty of breathing. Bowels regular, and stools solid and healthy, as they were also before the attack. Præcordial region very slightly prominent, but he never had palpitation; the heart-sounds are healthy, and the organ in natural position and apparently of natural dimensions. No murmurs along the arteries in the chest, nor other signs of aneurism. Liver of natural dimensions; spleen likewise. A slight murmur over the abdominal aorta (not produced by pressure of the stethoscope), but no pain, palpitation, or tumour. No abdominal disease detected. Has had no illness since the scarlatina, when he was six years old. Says he had a little irritability of the bladder on the voyage home last year, which he attributed to drinking bad water; this got well, and he had no return of it. The urine now is straw-coloured, clear, 1016; no albumen; no deposit seen under the microscope; very slightly acid.

His sensations on taking the mustard, on the evening of the 8th, he thus describes: "It caused a burning in my stomach, which seemed to come up into my throat, and stopped my breath." He does not remember throwing away the cup containing the remainder of the liquid. Says he had difficulty in drinking the water during the attack before the laryngotomy, but drank it because I told him.

11th.—At noon, I found him in a very excited state. Ever since the operation he has had slight emphysema about the chest, which all along he has been inclined to exaggerate, but to-day he magnified it into something terrible, and filled up the wound in the throat and his ears with cotton from his bedding, which he had torn to pieces; this was done with the idea of preventing the entrance of more air.—About three p.m. he became decidedly delirious, and was in a great fright about himself: said that he thought I had cured him, but that now he was gone; the blood had come up into his head, his belly and testicles had burst, and his limbs were all swollen. He was asked to take some water, but he said it would choke him; yet he took it.—At six p.m. he was violently delirious and very abusive, talking very loud and fast, and spitting at every body; said I had killed him by opening his windpipe, and that I had done it because he was a Catholic and I a Protestant. He was a little feverish, and his tongue dry. Pupils dilated and immovable. The tube was removed from the larynx, as he would not keep it in during this delirium, and the wound now remained freely open of itself. I administered chloroform by inhalation; he took three drachms and a half, and fell into a tranquil sleep, in which he continued for three hours. During the inhalation the pulse sank from 120 to 100. On awaking, he was still delirious, but quiet; covered himself with the bedclothes, and was apparently sleepy; yet he did not sleep, but continued in this drowsy state.

12th.—At one a.m., he expressed a wish to see me. I found him more collected, though excited. He asked forgiveness for having spit at the gentlemen, and inquired if it were really true that he had done so, as he thought he remembered doing it during his dream. Thought he would be much better if he got some of the same drug that put him to sleep before. I therefore gave him chloroform again. He took two drachms, and again fell into a tranquil sleep, which continued till half-past five a.m. When I went to him, about six a.m., he was drinking water and eating bread and butter, and said he was very hungry; still talked about being swollen; slightly incoherent; manner a little excited; skin cool and moist; tongue moist and clean.

13th.—He was somewhat incoherent all day yesterday; ate some food, but did not take his meat; became more excited towards evening, and began to spit a little as on the previous evening; was quieted by the inhalation of chloroform; took a drachm and a half, and slept all night; is known to have awoke only once, at nine p.m. Appears a little busy and excited, but does not talk incoherently at present; says he is much better, that the crackling (*i. e.*, the emphysema) in his chest is almost gone, and that he has now no swelling of the limbs. Tongue moist, slightly coated; pulse soft, 84; skin perfectly cool and moist; bowels not open since the night of the 10th. Ordered six drachms of castor oil immediately; port wine, sixteen ounces.

14th.—Continued much in the same state all day yesterday. Delirium increased in the evening; there seems to be always some great fear of death connected with it. Last night, said he was much worse; showed me his hand, remarking that the pulse did not beat. Chloroform administered again. Took two drachms, but the effect did not last. Went to sleep three times while inhaling this, but awoke in a few minutes; the third sleep was rather a deep one, accompanied by puffing of the lips during expiration. He was ordered the following: Battley's sedative solution, forty minims; peppermint water, one ounce; to be taken at bed-time. After taking the draught, he slept an hour and a quarter. With this exception, has been awake all night, and about 1 a.m. became very noisy; threw the contents of the night-stool over the sergeant and coolies. Is still delirious this morning; no fever; skin cool and moist; pulse 100, soft; bowels freely opened yesterday; did not eat his meat, but took the greater part of his beef-tea and port wine. Two p.m., chloroform, half a drachm; camphor mixture, one ounce; to be taken every two hours. In the evening, Battley's sedative solution, one drachm; water, one ounce: to be taken at bed-time.

15th.—Took his medicine up to midnight; would not take it afterwards; very delirious and troublesome all night; since midday yesterday has been perspiring freely; does not eat, but takes his beef-tea and port wine; is quiet and sensible this morning; pulse soft, 72; complains of headache. Repeat chloroform draught; anodyne draught at bed-time.

16th.—Took his medicine yesterday regularly up to 3 p.m.; got a little sleep during the day, the pulse varying from 72 to 76; ate nearly all his food, and was not at all excited, though not perfectly coherent. In the evening he was somewhat worse; thought he was dying, and requested me to send his clothes and money to his father. Took his draught at bed-time, and slept almost the whole night. Passes urine freely, but bowels not open; pulse more feeble than yesterday, only 72; skin moist and cool; tongue rather dry; is delirious, but not noisy; was crossing himself, and muttering some kind of prayer, when I saw him this morning; has had no chloroform since 3 p.m. yesterday. Repeat castor oil, half an ounce, immediately.

17th.—Got his fingers upon the wound in the throat yesterday, and made it bleed to a most surprising extent, most of the blood running into the windpipe, and being coughed up immediately. This weakened him considerably, and increased the frequency of his pulse, but he nevertheless ate his dinner, and slept the whole night without any opiate. He is still delirious this morning; says there is a bad smell from his body, which is injurious to other people; pulse soft, feeble, 88.

19th.—Sleeps well at night, but is delirious during the day; is melancholic; always fancies he is dying, but has no particular complaint to make of uneasiness; wound in the throat open, suppurating; appetite good; tongue clean, moist; pulse 92; bowels open.

25th.—The same wound in throat closed internally since yesterday. It is

granulating. He does not breathe through it now. Pulse soft, 68 (lying); skin cool and moist; pupils natural; tongue clean and moist; looks sad; still fancies he is injuring other people.

Sept. 8th.—The remaining notes are but a repetition of this last. He has the same delusions, and refuses various articles of diet in succession, in the hope of diminishing this smell from his body, which he considers so injurious to all around him. He sometimes tells me he knows he must die for the injury he has thus produced, and the number of deaths he has caused. He has become thin during his illness, but otherwise appears now to be in good bodily health.

Art. 22.—*Chorea cured by an attack of Measles.* By Dr. Kennedy.

(*Dublin Medical Press*, June 1, 1859.)

Commenting upon this interesting case, Dr. Kennedy says: "I have not before met any instance where chorea seemed to follow so directly on acute disease; but various nervous symptoms are, by no means, uncommon as a consequence of ordinary fevers. In the present instance, a week had not elapsed since the decline of the rash till chorea was well marked. The most striking feature of the case was, however, the cure—as it may be called—of the chorea on the appearance of the measles. Still the cure, which I thought was very likely to occur under the circumstances, did not surprise me. I had known cases where diseases of the skin, which had persisted for months before an attack of fever, disappeared subsequent to that event; and we all know how an attack of gout often frees the system as if by magic from sufferings of long duration. In truth, fevers of any intensity alter profoundly the whole constitution; and so it was, or appeared to be, the result in the present instance. Neither must we forget the usual character of an attack of chorea; for of all the affections which come under the head of curable, it must be placed amongst those which are most obstinate. Two months might probably be considered a reasonable time to cure it in; but here it was accomplished in less than a fortnight. On this account alone then, if for no other, the present case seems to me worthy of being recorded."

Case.—In February of this year the youngest members of a family of seven became affected with scarlatina, so slight, however, that assistance was not had till they were up, when most became attacked with an eruption like boils, and yet not exactly that affection. I found them all desquamating. At this period the eldest, a young lady between 13 and 14, sickened, with symptoms fully as like measles as scarlatina. It turned out, however, to be the latter disease, and in a severe form, being attended with raving, &c. While convalescent, and just after all rash had disappeared, I observed signs of restlessness about her, which, in the course of four or five days, increased much, and finally chorea developed itself in a form not to be mistaken. Her arms were in a constant state of jactitation, the left being the most engaged, and the head was being constantly tossed about, it being found impossible to confine her hair. Her power of swallowing became much affected, and also that of putting out her tongue, nor could she sew, and her expression was of the fatuous character, which so often marks the disease. As soon as her state

allowed of it—for she was still in bed when the chorea appeared—she was put on treatment, including the shower-bath, &c. Whilst matters were in this state, and before any impression could have been made on the disease, measles broke out among the other children of the family, and in due course attacked this patient. It at once struck me that the measles might be the means of curing the chorea, and with that feeling I thought it right to intensify, as it were, the acute disease, and though there appeared no call for wine, I did not hesitate to give it. For three days the choreic symptoms were very severe, so much so that the girl did not get a wink of sleep. By that time the rash had come out to a degree which is rarely seen. It then began to decline, and with it I had the pleasure of observing that the convulsive movements subsided *pari passu*, and at the end of another week there was scarcely a sign of them to be seen. Nor had I subsequently occasion to resume the special treatment for chorea. The young lady has been some weeks in England, and I am informed that, at present, she shows no symptoms of the disease. It may be well to state that I could not detect any morbid sound in the heart.

Art. 23.—*Veratrum Viride in Chorea.*
By Dr. Paul de Lacy Baker, of Eufaula, Alabama.

(*Southern Medical and Surgical Journal*, Sept., 1859.)

Dr. Baker's experience is confined to one case of chorea, but he corroborates it by three similar cases, furnished to him by a friend—Dr. Terry, of Eufaula, Alabama. Dr. Baker also suggests a trial of the drug in tetanus and hydrophobia.

1. *Dr. Baker's case.*—On the 7th of June, 1858, I was called to a young lady suffering from a violent attack of chorea. The mother informed me that it had been very gradually coming on, for a month or two; her symptoms, when first visited, were distressing to the last degree; her entire muscular system was in continuous and tumultuous commotion, so much so, that it was with difficulty that she could be kept upon the bed. This case passed on from bad to worse, notwithstanding the most assiduous attention and energetic treatment; tonics, antispasmodics, and anodynes were exhausted without avail. The spine and nucha were cupped and blistered without benefit, chloroform was administered both internally and by inhalation—in fact, every remedy that could be legitimately suggested was resorted to, but without success; and it seemed at last that the girl must die from exhaustion and want of sleep. Opium, and its various preparations, appeared to make her worse; once or twice I suggested the employment of Veratrum viride, but it was postponed until the 18th of the month, when my partner, Dr. Thornton, under whose especial care the case had been, was called off to Georgia. On that day, just as I was starting to visit her, my friend Dr. Terry, hearing of the unusual violence and obstinacy of the case, stopped me and proposed that I would give Veratrum viride a trial, assuring me that he had thrice used it in chorea with the most satisfactory results. So, I concluded, both from my own experience and from his positive statement, to withdraw all other medication and give the Veratrum viride a full and fair trial. The family had given up all expectation of her recovery. I told them, however, on my arrival, that I had come with a new remedy, the last and only one that had not been tested, and that I felt convinced that the girl would recover under its use. I at once commenced its administration, and as she was gradually brought under its influence the turmoil began to cease; the face, which had been worked by its

muscles into the most ludicrous and horrible distortion, became placid and intelligent, the head had ceased its everlasting jerking, the extremities lay still, the body left off writhing, *and the patient quietly passed into a peaceful and profound slumber.* This sleep was deep and long, as it was the first, with few and slight exceptions, that she had had in nearly two weeks, and the quiet that the muscles now received was all that had occurred save during those few and short slumbers. At a subsequent visit I found the family cheerful and hopeful and the patient quiet and sleeping, the pulse but little depressed; there had occurred no vomiting. I roused her, and, to my great satisfaction, when awake, there was no jactitation of the extremities, and but very little twitching of the muscles of the face.

In this case I thoroughly tested the influence and power of Veratrum viride for the first few days; if its administration was withheld the commotion began gradually to return, but all would again become quiet upon resuming its employment. At first, so continually did she sleep under the quiet that it induced, that the family called the Veratrum preparation "the laudanum mixture," notwithstanding they were aware that she had taken large quantities of morphine, without benefit, in our efforts to induce sleep. The Veratrum was continued for several days, the convulsive movements ceased altogether, the muscles became completely obedient to the will, and the lady returned to perfect health and blooming beauty, under a judicious and properly regulated tonic course of treatment.

2. *Dr. Terry's cases:*

Case 1.—I was called in Randolph county, Georgia, to visit a child aged twelve years. It had been confined to bed for three weeks, and was reported to have been under treatment for about six weeks; first for worms, with calomel, spigelia, wormseed, &c., and subsequently for chorea (with which I found it suffering), with cimicifuga, iron, quinine, and the usual routine treatment, until the child was apparently dying.

It is not in the power of language to convey a proper conception of the truly pitiable state in which I found this child; no description can afford any adequate idea of its appearance and condition. It had slept none, neither had it taken any nourishment for days; it was evidently dying from exhaustion and inanition, the muscular commotion was violent, universal, and unaffected by sleep; the lips embossed with foam, worked up by a continual champing of the teeth. I instituted the following treatment: three drops of Veratrum viride were administered every three hours, the vehicle for each dose being a teaspoonful of gum water, a small portion of which was introduced into the mouth every few minutes, until the whole was given, the medicine being in this way rather *absorbed* from the mouth, probably, than swallowed. In twenty-four hours I had the gratification to see the symptoms greatly improved. The muscles were much quieter, and the child could swallow without difficulty (the trouble in this respect had constituted the greatest embarrassment in the treatment). I continued the Veratrum viride in connexion with iron and quinine. At the end of the fourth day all convulsive action had ceased; the Veratrum viride was still further continued, though in smaller doses, and at long intervals. Quinine, iron, and generous diet completed the cure promptly.

Case 2.—Girl, æt. 15. This was an ordinary case. She was purged freely, after which four drops of Veratrum viride were administered every three hours. Under its use the convulsive phenomena soon disappeared, after which the Veratrum viride was continued for a few days at long intervals. This case also promptly convalesced under the use of iron, quinine, and generous diet.

Case 3.—Woman, æt. 36; had borne no children; was subject to menorrhagia, immediately after an attack of which she was taken with chorea, marked by continued nodding of the head and violent convulsive action in one arm, together with slight jactitation of one leg. In this case I directed six drops of Veratrum viride every three hours; the fourth dose occasioned slight nausea, and after the fifth dose the convulsive action ceased, when the Veratrum viride was withheld. There followed, in the course of eight or ten hours, a return of the symptoms; the medicine was again resorted to with the former quieting result. The doses were then reduced, but continued for several days at long intervals. This case, like the others, recovered under the use of quinine, iron, and generous diet.

Art 24.—*Observations on Chorea magna.* By Dr. Skoda.

(*Allg. Wien Med. Zeitung*, 36, 1858; and *Schmidt's Jahrb.*, I, 1859.)

Chorea magna is the name given by Professor Skoda to those extraordinary cases, akin to chorea, in which the most characteristic features are paroxysms of jumping, turning, rolling, &c. As a rule, these movements, though often violent and prolonged, are followed by little exhaustion or pain. The cause is yet to be discovered, but it is evidently of a functional rather than of an organic character, or recovery would not be so complete and rapid as it is generally found to be. Chorea magna, in Professor Skoda's opinion, is more easily cured than ordinary chorea, or, as he calls it, chorea minor, and the disposition to relapse is somewhat less marked. Quinine is said to be the most efficacious remedy, large doses being given if small doses did not produce a speedy change for the better.

Art 25.—*The comparative value of Zinc in Chorea.* By Dr. Stone, Medical Registrar of St. Thomas's Hospital.

(*Medical Times and Gazette*, Sept. 17, 1859.)

Dr. Stone's conclusions are based upon fifty cases of chorea admitted into St. Thomas's Hospital during the year 1858.

The general summary is as follows:—Of 16 cases treated with sulphate of zinc, 13 went out cured, 3 relieved; but 2 of the latter were in a fair way of recovery, and may probably be set to the credit of the medicament. On the other hand, three of those ultimately cured, owed their improvement, partly to ferruginous preparations; and in one case the zinc had no effect whatever. It may, then, be stated generally, that advantage was derived from the zinc in 14 out of 16 cases. The longest stay in the hospital among these cases was 123 days; the shortest 14; the average stay, 44·6 days.

Fourteen cases were treated during the same period with preparations of iron; all were cured. The longest stay in hospital was 161 days; the shortest 6 days; average stay, 44·2 days.

Twenty cases were treated with liq. potassæ arsenitis:—18 cured; 1 relieved; 1 died. The longest stay in hospital was 55 days; the shortest 6; average stay, 26·3 days. Average stay in hospital of the 50 cases submitted to three principal remedies, 37·2 days; average stay of all the 54 cases, 35·4 days.

The results of this analysis are somewhat remarkable, as failing to confirm the usual estimate of the value of sulphate of zinc in this disorder. The iron seems to act more certainly, and the arsenic both more certainly and more rapidly than the zinc. The average duration of treatment both with iron and zinc, 44·2 days and 44·6 days respectively, is very similar, and both are above the general average of the whole number of cases, namely, 35·4 days; whereas the average stay of the arsenic cases falls as low as 26·3 days. This difference is the more remarkable, as the character of the cases submitted to the arsenical treatment rather exceeded in severity that of the others; and, indeed, the only death recorded belonged to this division.

It remains a question whether the discrepancy between these results and those of some previous well-conducted observations is due to mere accident, or to some real difference in type between cases originating at different times and under dissimilar circumstances.

Art. 26.—*Case of Rotatory Convulsion.* By Dr. Minchin, Physician to the Hospital of the North Dublin Union.

(*Dublin Hospital Gazette*, Sept. 1, 1859.)

Case.—Francis C—, æt. 4½, of strumous habit, was admitted into the hospital in May, 1859, labouring under acute hydrocephalus. From its mother's statement it appears that the child had not suffered from any ill health during the first three years, having cut all its teeth and got through all the troubles incidental to that period without much difficulty. At the end of the third year it took measles, which confined it to bed for four weeks, and from which it made but an imperfect recovery; in fact, the health never became re-established, for there remained a constant cough, with emaciation, depraved appetite, and a continual discharge of purulent matter from the left ear. A short time before admission into hospital the child was seized with vomiting, intense headache referred to the forehead, disturbed sleep, and occasional convulsions. Although the mother was aware that this illness was connected with suppression of the otorrhœa, she had not observed whether the discharge had ceased previous to the accession of the symptoms referred to, or only during their progress.

On the 24th of May, in the morning, being the third day after admission, the patient presented the following symptoms: great drowsiness, approaching to coma; heat of scalp somewhat less than on the preceding day; eyes half closed; tongue dry; deglutition difficult; respiration oppressed; pulse irregular and weak, about 130, but not to be counted.

In a little more than an hour afterwards, in place of the convulsions, which were wont to recur at irregular intervals, and which, up to that time, had affected principally the muscles of the face and the arms, a new phenomenon presented itself: the left arm and leg were thrown forwards towards the opposite side; then the whole body commenced to roll longitudinally from left to right; the child, meanwhile, being quite insensible to external impressions. Upon being replaced in the middle of the bed by the attendant nurse, the rotation of the body was resumed, and this movement continued during several minutes. Three times afterwards, in the course of the same day, this singular form of convulsive movement was repeated. Next morning there was complete hemiplegia of the right side; the child lay in profound coma, and died in the course of the afternoon.

Autopsy, 26 *hor. p.m.*—Body much emaciated; upper part of both lungs occupied with tubercles in incipient stage. Adhesions at the base of right lung posteriorly.

Head.—Fontanelles ossified. On the convexity of the cerebral hemispheres the arachnoid presented a look of great dryness. Cerebral substance healthy on a superficial aspect, as well as firm to the touch; but when sliced down it exhibited more and more softening towards the central parts. Lateral ventricles distended with clear fluid, nearly three ounces in each. Ventricular walls extremely soft, breaking down readily into curdy flocculi. At the base of the brain was found a considerable quantity of a yellowish semifluid effusion, underneath the arachnoid. This extended even below the pons, and obscured the origins of all the nerves in this neighbourhood. Special care was observed in removing the encephalon, to avoid injuring the nerves, particularly the auditory; no appreciable difference, however, could be perceived in the relative appearance of this nerve at the two sides.

Cerebellum.—Imbedded in the inferior surface of the left hemisphere was found a firm tubercle of an elongated or oval shape, and about the size of a small almond. This was attached strongly by one extremity to the dura mater, to which it remained adherent on the removal of the cerebellum, leaving a fissure or rent in the substance of the latter. It is probable that this tubercle was developed originally in the dura mater, and encroached gradually on the cerebellum, till it became lodged in its substance; for in the middle of the fossa corresponding to the opposite hemisphere, there existed what appeared to be the commencement of a similar growth, in the form of a rough tubercular elevation of the dura mater, at which point there was adhesion of the two arachnoid surfaces.

Commenting upon this case, Dr. Minchin says: "Whether to attribute the rotatory convulsions in this case to irritation of the left auditory nerve, as indicated by the long continuance of otorrhœa at that side, and its sudden suppression, or whether the cause of the phenomenon in question is to be sought for in the irritation set up by the upward pressure of the tumour which was found in the left cerebellum, it is not easy to determine. M. Brown-Séquard's experiment upon the auditory nerve appears to have produced an effect different in no essential feature from that observed in the animals operated upon by M. Majendie. The latter physiologist states, that on making a vertical section of the cerebellum, so as to leave one fourth of the whole adhering to the crus of the right side, the animal begins to rotate, and continues rolling towards the injured side; at the same time the eyes are affected, just as we recollect to have seen in the rabbit whose auditory nerve was punctured by M. Brown-Séquard—the eye on the injured side being directed downwards, the other upwards. Rotatory phenomena occurred also when the crus cerebelli of one side was divided; and these movements ceased immediately on making a subsequent section of the opposite crus. That these movements may be produced irrespective of any appreciable irritation of the auditory nerve, would also appear probable from the following case, related by M. Serres:

"A shoemaker, æt. 68, of intemperate habits, exhibited, after a debauch, a kind of drunkenness which surprised his friends. Instead of seeing objects turning round him, he seemed to himself to be turning, and in a few moments commenced revolving. When placed

in bed he continued to manifest this tendency till he died. Upon examining the head, an extensive lesion was found of one of the peduncles of the cerebellum."

ART. 27.—*On the nature, seat, and relations of Neuralgia.* By Dr. C. HANDFIELD JONES, Physician to St. Mary's Hospital.

(*Lancet*, Sept. 10, 1859.)

In the majority of cases, in Dr. Handfield Jones's opinion, neuralgia essentially implies a lowering of the vital power and functional action of the nerve, and not an increase--an opinion which, as we have elsewhere endeavoured to show, is also supported by the beautiful experiment of Dr. du Bois-Reymond, in which a diminution of the nerve-current is found to be co-existent with the presence of pain in the nerve.

"Now it may be fairly argued," so writes Dr. Jones, "that when the symptoms of debility, and especially of nerve debility, are so apparent, and have so distinct a relation to the particular symptom, this must be itself of like essential character. It can hardly be that the morbid state of the nerve affected can be greatly different from that which prevails so generally throughout the system, especially when we consider the means which avail for the cure of both. Romberg's metaphorical expression, speaking of anæmic hyperæsthesia (*i. e.*, neuralgia), that 'it seems as if pain were the prayer of the nerve for healthy blood,' is, in all probability, exactly true. The nutrition of the nerve being ill performed, its structure undergoes some molecular alteration which conditionates pain. What is true of neuralgia from this cause I believe is true of all cases belonging to the non-organic class. Electrical disturbances, damp cold, malaria, seem to me all to act in the like way as far as we can judge—viz., by deranging the molecular nutritive actions of the nervous structure, and so impairing its function. There are several circumstances which seem to me strongly to support this view. One is the very frequent co-existence of numbness with the neuralgic pain, especially in highly sensitive parts, as the fingers and hands. One cannot say in what the condition producing numbness differs from that producing pain; but it is clear there is no opposition between them; both are often present together, and the numbness commonly remains as the more permanent condition in the intervals of the paroxysms of pain, and even after they have ceased to occur. Now, numbness is evidently a failure of functional action. Of the same import is the occurrence of various degrees of muscular paralysis, which is often associated with neuralgia, evidently as an analogous affection of the motor nerves. It yields to the same treatment. The phenomena of myalgia may also be referred to in illustration of the nature of neuralgia. Here we have a manifest instance of the relation of pain to debility; the sensory nerves of the muscles express pain because they are weak; whatever increases the debility increases the pain, and *vice versâ*. The relation of ague to neuralgia is worth considering in respect to this question. It is certain that neuralgia may be a manifestation of malarious influence

just as much as ague, and that the two may replace each other. It may also be affirmed that in neuralgia (non-organic) from other causes, the pain-causing condition of the nerve must be the same as in malarious neuralgia. Now, in an ague fit there is no doubt that the vaso-motor nerves are in a paralytic state, consequently it is probable that in a neuralgic paroxysm the sensory nerves are similarly affected. Lastly, we may allude to the cure of neuralgia by Faradization as an illustration of its nature. The pain of a sensory nerve and the paralysis of a motor may both be removed by the stimulus of the interrupted current. This surely indicates that both states are similar.

"Even in organic neuralgia, it seems to me a matter of much question whether the nerve affected is in a state of exalted excitability, or simply of deranged and disordered nutrition. In lead poisoning, the motor nerves of the muscles are certainly paralysed, the pains are diminished (Romberg) 'by pressure and friction,' and the whole phenomena are indicative of diminished, rather than of increased, vital actions. The curative action of the sulphuret of potassium bath is only intelligible by regarding it as a peculiar stimulus to a great sensory surface, which is reflected from the nervous centres on the paralysed nerves and muscles. That it does produce muscular contraction, at least in some cases, is, I believe, certain. In gouty neuralgia, if we take colicky and spasmodic affections for examples, the disorder is much more of an asthenic than hyperæsthetic character. The pain and suffering attending a characteristic outbreak of gout in the foot have much more the features of hyperæsthesia than the colicky disorder. That a nerve which receives for nutrition blood poisoned by uric acid should be disordered in its acting, and thrown into a state conditionating pain, is very intelligible, but it can hardly be regarded as having its irritability exalted. On the other hand, the nerve lying in a focus of inflammation, by reason of the active hyperæmia, would seem really to be in a state of hyperæsthesia. Its condition is analogous to that of the nerves of one posterior limb in Brown-Séquard's experiment of transverse semi-division of the dorsal cord, where hyperæsthesia is produced in consequence of paralysis of the vaso-motor nerves, and the resulting hyperæmia.

"Again, when neuralgia results from the impaction of a spiculum of bone, the development of a tumour, or the like, in a nervous trunk, although severe pain may be produced, it does not seem very clear that the nervous irritability is necessarily exalted—*i. e.*, that the nerve-filaments, either on the distal or proximal side of the irritant, are more sensitive than they would be naturally. In fact, one would rather expect that the normal function of the nerve would be interfered with. In a case of neuroma recorded by Mr. Toynbee in the Pathological Society's Report for 1851, the only symptom was a diminution of the power of hearing. In a case recorded by Dr. Denmark, where severe neuralgia was produced by a fragment of a bullet imbedded in the radial nerve, no mention is made of the painful parts being unusually sensitive. The same may be said of a case recorded by Sir B. Brodie, in which a femoral aneurism produced pain at the inside of the knee. The following case from the 'Dublin Medical Journal,' May, 1848, bears decidedly on this point:

"C. M—, æt. 27, widow, mother of four children, had a neuromatous tumour developed in the course of the median nerve, of the size of an almond, in consequence of the nerve having been divided an inch above the wrist by broken glass. If anything, even her dress, touched the tumour, severe pains shot down to the hollow of the palm of the hand, and upwards to the shoulder. She complained much of numbness and coldness of all parts of the hand supplied by the median nerve. The nerve was cut across, and the neuroma removed. Fifteen months after the operation, she was quite free from pain, and observed nothing abnormal, except a remarkable coldness of the fingers supplied by the median nerve.

"In some cases, however, it is certain that the peripheral nervous filaments are truly hyperæsthetic, as in the case related by Romberg (p. 37-44). In this, however, the hyperæsthesia may be accounted for by the increased supply of blood sent to that side of the face, the arteries pulsating strongly and the eye being bloodshot and prominent. The same explanation may apply to many other cases where the neuralgia is complicated with hyperæsthesia. The hyperæmia is conditionated by paralysis of the vaso-motor nerves, which run in company with the sensory, and this very circumstance is a further reason for viewing the fundamental condition of neuralgia as one of paralysis rather than excitement.

"From the considerations which have been advanced, I am led to conclude, that in the majority of cases neuralgia essentially implies a lowering of the vital power and functional action of the nerve, not an increase. There are, however, certainly cases in which the painful parts are not manifestly hyperæmic, but are yet excessively tender, and intolerant of the least pressure. In these, it is clear that the excitability of the nervous apparatus is morbidly increased, yet I question whether the term hyperæsthesia is properly applied to them. In the state referred to, any, even the least, excitement brings on or aggravates the pain. This certainly implies an undue mobility of the nerve-structure, a readiness to be thrown into the pain-causing condition, but by no means a real increase of sensory power. It is by no means clear that a part in this state would appreciate two points as separate at a smaller distance from each other than it would when healthy. I should not regard such a condition as identical with that induced by partial division of the spinal cord, as in Brown-Séquard's experiments, or by strychnia poisoning. I think it probable that in these cases the morbid action is seated more peripherally towards, or in, the cutaneous terminations of the filaments; while in ordinary neuralgia the larger ramifications or the trunks are affected.

"From the preceding discussion, we pass to the consideration of the question—What is the real seat of neuralgia—in the nerves or in the centres? Obviously, this is no easy question to answer. According to the law of eccentric phenomena, every sensation of which we are conscious is referred to the pheripheral termination of the sensitive fibres (so Romberg writes). Bowman and Todd add that the sensation is referred to those parts, and to those only, to which the fibres irritated are distributed. According to this view, then, all appreciation of sensations as referred to any point in the course of the nerve is

out of the question. An irritation, wherever set up, must be felt at the peripheral extremity of the fibres implicated, and never in any part of their intermediate course. But there are facts which are strongly opposed to this exclusive dogma, and which seem to prove that a sensation may be referred to various points in the course of the nerve-fibre. If we hit our funny-bone, although no doubt pain and tingling are felt at the peripheral distribution in the fingers, yet the chief agony is in the trunk of the ulnar nerve at the part struck, and certainly not merely in the skin covering it. The circumstance dwelt on by M. Valleix, that the specially painful points in nerves affected with neuralgia are always those where the nerve becomes superficial, is also a proof of a sensation being referred to other points besides the terminal. The same may be said of the pains which patients describe as shooting down along the track of a nerve as the sciatic. These certainly are not located merely in the skin which covers in the nervous trunk.

"From these considerations, I am led to admit the possibility of very numerous exceptions to the law of eccentric phenomena, and to believe that pain in a nerve may really indicate by its situation the seat of the irritation or other morbid action. This is a conclusion of some importance to the local treatment of neuralgia. It justifies our empirical habit of applying sedative remedies as near as possible to the seat of pain. But of course we cannot affirm, in any case of pain involving the trunk of a nerve, that the morbid action *may* not be central; the law of eccentric phenomena holds true so far as that central disorder may certainly give rise to peripheral sensation. The only means of certainly distinguishing the site of the pain-causing action is division of the affected nerve. If this arrests the neuralgia, we know the disorder is seated peripherally; if it fails to do so, we know we have to seek more centrally. In a large number of cases, I fear it must remain problematical as to where the real seat of the disorder is. If—the pain being specially referred to some intermediate spot—injection of opium at that part (subcutaneous) should give more relief decidedly than the same dose at a distance, it would afford ground for believing that the cause of the neuralgia was localised in that spot. In the ordinary way of rubbing sedative liniments on the cutaneous surface over the seat of pain, we have no means whatever of proving a local action upon the suffering nerve, but rather the reverse. For take the case of the sciatic nerve, where pain is acutely felt at the back of the thigh, and notably between the ischiatic tuberosity and the great trochanter: if this is relieved by a sedative application to the covering cutaneous surface, we are sure that the chief action of the remedy must be on cutaneous ramifications of the glutæal, lesser sciatic nerves, and branches of the external cutaneous and other nerves on the front of the leg. These will convey impressions to the spinal centre, not far from the part where the roots of the sciatic are implanted; so that if the neuralgia were of central origin, it is very conceivable that the morbid action might in this way be beneficially modified. But, considering the depth at which the sciatic nerve lies from the surface, it seems quite impossible that the aconite, chloroform, &c., should penetrate so far through skin, fat, and

fascia, or even muscles. There exists some evidence to show that any strong impression made on the centre (such as cauterising the ear, galvanising the columna nasi) through incident nerves may put a stop to some neuralgiæ.

"The relations of neuralgia are of course very different according to the cause which gives rise to it. If, however, we take the commonest kind—which arises from cold, malaria, debility—we must allow that it manifests a very close affinity with non-febrile *rheumatism*. Rheumatic and neuralgic pains are frequently so very similar, that they are only to be distinguished by the action of remedies. Iodide of potassium cures the rheumatic, quinine and iron the neuralgic; while often it occurs that in the same case, after having begun with the former, we have to resort to the latter to complete a cure. The beneficial action, noticed by several recent observers, of muriate of ammonia in neuralgia, can scarcely be dissociated from its remarkable and positive remedial action in muscular rheumatism. The interesting but obscure phenomenon of rheumatic paralysis is closely similar to, if not identical with, the paralysis or paresis of motor-nerves which so often forms a part of neuralgia. *Catarrh* is allied to neuralgia by the similarity of its causes, the manifest implication (sometimes to a grave extent) of the cerebro-spinal nervous system, the resemblance of its inflammatory actions to those sometimes accompanying and depending on neuralgia, and in a large number of cases by its 'juvantia.' If exhaustion aggravates a neuralgia, so does it also a catarrhal flux; while rest and toning means have an opposite effect. The affinity between neuralgia and *ague* in malarious cases is strikingly apparent; the two disorders so evidently replace each other, that there can be little doubt that the difference is only one of situation: the sensory nerves being affected in one case, the sympathetic system in the other. The therapeutic effects of arsenic and of quinine in ague and in common neuralgia, *rapprochent* the two disorders not a little."

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 28.—*On the treatment of Pneumonia.*
By Dr. BRANDES, of Copenhagen.

(*Virchow's Archiv*, T. xv, liv. 3 and 4, 1859.)

The author endeavours to prove, by means of statistics, that the purely expectant treatment of pneumonia has by no means given, at all times and places, those favourable results which its advocates boast of. The indiscriminate use of general bleeding, he believes, is just as injudicious as the exclusive adoption of the expectant plan.

In every epidemic, it is necessary to determine whether bloodletting is applicable or not to each particular case. Venesection is generally to be avoided in cases where the blood is in an anæmic or dissolute condition, as for instance in drunkards. In the General Hospital, at Copenhagen, the acetate of lead is frequently used in such cases. Professor Christensen praises this remedy very highly, and had ample opportunity of testing its value, as cases of pneumonia in de-

bilitated individuals are of common occurrence in the hospital referred to. Professor Christensen believes the acetate of lead to be one of the most efficacious means in the treatment of pneumonia, and prescribes it generally in combination with quinine, one grain of each every two hours. If the cough is very violent, opium is added instead of the quinine. Dr. Bramsen has used acetate of lead, especially in the treatment of pneumonia in very young children, and has been very successful with it. Dr. Brandes, who tried the remedy in doses of half a grain in children of one to eight years of age, has obtained results equally favorable, and he extols particularly its calming properties in this disease.

Art. 29.—*On the causes of the mutual independence of Bronchitis and Pneumonia.* By Dr. Robin.

(*Gaz. Méd. de Paris*, No. 2 1859; and *Medical Times and Gazette*, Oct. 22, 1859.)

From the faulty notions which prevail as to the elementary structure of the organ of respiration, the causes of the mutual independence of bronchitis and pneumonia do not appear to have been recognised. It is customary to represent the tissue of the lungs as a mere continuation or expansion of the bronchi, which is as incorrect as it would be to represent the uriniferous tubes of the kidney as a continuation of the urethra, bladder, and ureter. As long as he believed in this doctrine, M. Robin never could comprehend why bronchitis should not constantly be passing into pneumonia. Nothing, however, can be more distinct than the pathological anatomy and symptoms of the two affections, which may be sometimes observed co-existing, but never passing from the one into the other.

The difference between the two diseases, marked as they are, must remain incomprehensible to those who consider the entire tube as lined with an uninterrupted mucous membrane from the larynx to the extreme subdivisions into *cul-de-sacs*. The real state of things is, however, as follows:—Having passed through a certain number of subdivisions, the bronchi, now no more than one or two millimetres in diameter, lose their portions of the cartilaginous rings, and have no longer transverse muscular fibres, elastic longitudinal fibres, or a mucous membrane separable from the bronchial wall, properly so called. They no longer possess a prismatic epithelium with vibratile cilia—losing, in fact, all the characters of bronchi. The pulmonary or respiratory canalicules, erroneously termed ultimate bronchial ramifications, continue to subdivide and terminate in rounded or ovoid *cul-de-sacs* (improperly called bronchial or pulmonary cells). which at the period of birth are from five to eight hundredths of a millimetre large, and in the adult attain the size of one or two tenths. These canals have not the structure of the bronchi, but are characteristic of the pulmonary parenchyma. They are surrounded by intimately interlaced bundles of elastic fibres, mingled with fibres of the laminated tissue, formed of fibro-plastic elements, and of vessels. These vessels form on the interior of the canalicules (which presents slightly projecting folds), a network differing from that of the bronchi. This net-

work consists of large capillaries, which nearly touch each other, so as to leave intervals smaller than the capillaries themselves. It is distributed on the very tissue of the walls of the pulmonary canalicules (there being no mucous membrane separable from the elastic parenchyma), and is only separated from the cavity of these conduits by a layer of pavement epithelium with large nuclei, which commences where the cylindrical epithelium of the bronchi ceases. Thus the pulmonary canals, in which hæmatosis is accomplished, have a different structure to that of the bronchi which convey the air necessary for respiration. It is not possible to detach a mucous membrane distinct from the pulmonary parenchyma and the laminated tissue, in which, or on the surface of which, the capillary network is distributed, as is the case in the bronchi still provided with cartilages. In this way we may explain the rapid absorption which takes place in the lung, as compared with the slower absorbing power of the organs provided with mucous membranes—as also the easier rupture of these capillaries, with discharge of blood, or of substances injected by the air-passages. There is, in fact, as great a difference in texture between the bronchi and the pulmonary parenchyma, as between that of the excretory duct of a gland, and of the gland itself.

It will therefore be seen that affections seated in two portions of the apparatus so different, may well present great distinctions in their course, &c. But a still more important cause also explains the rarity of the extension of inflammation from the bronchi to the pulmonary tissue. Thus, in the case of bronchitis, the portion of the capillary system which is the seat of inflammation belongs to the general capillary system, properly so called, and receives its blood from the aortic or red-blood system; but in the case of pneumonia, the capillaries of the lesser circulation, deriving their supply from the black blood of the pulmonary artery, are in question. It is at the expense of this black blood that the morbid products of pneumonia are formed, as in hepatitis it is at the expense of the black blood of the vena porta that abscess of the liver is produced. We know, in fact, that although the pulmonary artery accompanies the bronchi throughout their entire extent, it gives no branch to them, nor to the interlobular partitions, and that it does not anastomose with the bronchial arteries. The latter entirely cease at the points where, or at a little beyond where, the small cartilaginous nuclei disappear from the bronchi, *i. e.* where the bronchial canalicules are only one millimetre, or a little more, in diameter. This is the exact spot where the capillary distribution of the venous artery begins to take place between the contiguous walls of the pulmonary canalicules, forming on their sub-epithelial surface a network of quite a special type of mesh-work, which is also found in the lesser circulation of all classes of vertebrate animals, even to the branchial plates of fishes. Beyond the bronchi, the bronchial arteries only furnish *vasa vasorum*, and branches to the interlobular laminated tissue, which extend as far as the pleura.

These circumstances supply not only an answer to the question proposed in this article; but also explain some of the differences which distinguish the nature and progress of inflammation of the lungs from that of other parenchymatous organs. It explains also the differences

of pneumonia, according to age, differences not exhibited so decidedly in the inflammations of any other organ, and which arise, not only because the parenchyma and the respiratory canalicules undergo notable modifications, but also because modifications in its nature and course are produced upon the inflammation by the nature of the circulation. These are nowhere so decided as in the lesser circulation, which unites, anatomically and physiologically, the two sides of the heart, although its disturbances are often only caused indirectly, in consequence of lesions of the left side of the heart, instead of directly by changes on the right side.

Independently of the special type of distribution presented by the pulmonary capillaries, differing from that of the bronchial, their structure also differs in some points from that of the general capillaries. They are, in fact, amongst the largest of the body, and their parietes present smaller, more numerous, and more approximated nuclei than those of the other capillaries. It is, however, to be observed that the capillaries of the portal system in the liver present the same peculiarities of structure. These facts are not without their value, when we call to mind that inflammation is a disturbance of the capillary circulation.

Art. 30.—*Acute Miliary Tuberculosis running its course in thirty hours.* By Dr. C. A. Wunderlich.

(*Archiv für Phys. Heilk.*, Jahr. 8, 1859, No. 2; and *Med.-Chir. Review*, July, 1859.)

Dr. Wunderlich relates this case as an instance of what he regards as very acute miliary tubercle, its commencement and termination occurring in thirty hours, though he admits that it may also be interpreted as a case of acute tuberculosis which remained latent until shortly before death:

Case.—A type-founder, æt. 20, living in easy circumstances, had almost invariably enjoyed good health, never having shown symptoms of lead poisoning. At Christmas he had been poorly for a few days, and on the 6th of February of the present year he was also slightly indisposed, but was perfectly well afterwards. On the 11th of February he went to work as usual, and ate his dinner with a good appetite. After dinner he vomited once, but was able to do his work. At five p.m. he complained of vertigo, and on going to the water-closet became comatose. He was brought to the Leipzig Hospital in this state, was undressed with difficulty, and when put to bed lay on his right side doubled up; opened his eyes at times when spoken to, but did not answer questions. His face had the usual colour; the pupils acted well; there was a moderate blue line round the teeth. The front surface of the chest could not be examined. There was no dulness posteriorly. Respiration was vesicular throughout, except at the left scapula, where it was slightly bronchial. Respirations, twenty; pulse, ninety-two; heart-sounds, normal. Nothing abnormal about the abdomen. General nutrition good. Insensibility persistent. Constant jactitations increased every half-hour paroxysmally, but without spasms or screaming. On the following morning the face was purplish, and the patient swallowed nothing. After a warm bath, with cold applications to the head at mid-day, he was attacked with universal convulsions, alternating with tetanic extension; the face became cyanotic; there

was froth at the mouth. After an hour and a half's interval the attack was renewed; then after half an hour, and subsequently they returned every five minutes. The pupils now became contracted; coarse and fine mucous râles were audible over the lungs; respiration became irregular; the tracheal rattle supervened, and the convulsive paroxysms increasing in frequency; he succumbed to one at one a.m. the next night. *Post-mortem:* Cranium and dura mater normal; the meninges normal throughout, except that at the left posterior lobe there were a few small opaque spots, with two distinctly projecting, translucent, grayish, miliary tubercles. The left posterior lobe of the cerebrum was softer than the remainder of brain, but without extravasation or congestion; ventricles not enlarged, without serum; the septum pellucidum and fornix softened; the remainder of the brain healthy. Both pleura adherent. The right apex showed cicatricial contractions, and besides small, almost cylindrical, bronchial dilatations and old tubercular granulations, a large number of fresh, roe-like, prominent miliary tubercles. In some parts these were densely aggregated, but there were large interspaces between the groups; these also extended into the middle and inferior lobe. In the left lobe the deposit was confined to the upper lobe. Heart, spleen, liver, peritoneum, and kidneys, were normal; in the lowest part of the small intestine the solitary glands and Peyer's patches were somewhat enlarged; in the stomach were some hæmorrhagic erosions.

Art. 31.—*On the Endemic Phthisis of soldiers.* By Dr. Tholozan.

(*Gaz. Méd. de Paris*, No. 23, 24, and 27, 1859.)

The great increase of deaths among soldiers in times of peace appears to be owing especially to pulmonary diseases of a peculiar character. These diseases are the result of a depraved state of constitution, brought on by the crowding and other evils of life in barracks. The endemic phthisis of soldiers, indeed, arises under the same circumstances as the various eruptive fevers—smallpox, measles, scarlet fever, typhoid or typhus fever, and the rest; and the means which are required to check the development of the fevers, will also check the development of the pulmonary lesion.

According to this view, it is necessary, for the future, to look upon the phthisis of soldiers as more akin to specific maladies of an infectious character than to ordinary phthisis. Dr. Tholozan's views, which are founded upon careful and extended inquiries, deserve every attention on the part of those who have the charge of the health of our own army and navy.

Art. 32.—*The saturnine treatment of Phthisis.* By Dr. Beau.

(*Gaz. des Hôpitaux*, No. 58, 1859.)

In a clinical lecture, Dr. Beau informs us that he was led to try this mode of treatment by two reasons, one practical and the other theoretical. The practical reason is derived from the real or supposed immunity of workers in lead from phthisical affections. The theoretical reason is not easy to seize. It is apparently this:—that anæmia is an

effect of saturnine as well as paludine intoxication, and that intermittent fevers (which are the effect of the latter intoxication), are more or less incompatible with consumption. Dr. Beau has tried this plan of treatment in five cases, and in four of these he tells us that the cough and expectoration were greatly relieved. The carbonate is preferred, as, from its insolubility, being less likely to derange the stomach. Pills of ten centigrammes, in numbers gradually increasing from one to eight in the course of the day, are given until signs of lead-poisoning begin to show themselves. In the first of the five cases mentioned, these signs made their appearance in about a month—the time is not given in the other four.

ART. 33.—*On the action of Common salt upon Phthisis.* By Dr. COTTON, Physician to the Hospital for Consumption, at Brompton.

(*Medical Times and Gazette*, May 28, 1859.)

This substance was administered to twenty-five patients, thirteen of whom were males, and twelve females; their respective ages varying from sixteen to thirty eight, the majority being about midway between these two numbers. In seven cases the disease was either in the first stage, or the very commencement of the second; but in the rest there was distinct evidence either of tubercular softening or actual vomicæ. Copious and accurate notes of the cases in which salt was given were made by Dr. Maxwell, the resident Clinical Assistant at the Hospital.

The salt was dissolved in water, and given in doses varying from one to three drachms, two or three times a-day, the smaller quantity generally being prescribed at first, and gradually increased; a little compound tincture of lavender was added merely to disguise it. According to its effects, it was continued for a period varying, in the different cases, from two to eight weeks. It was found that one drachm could generally be taken without nausea; but in a few instances two drachms produced some degree of sickness, and three drachms caused vomiting, although, as a general rule, and in the majority of cases, these larger doses did not seem to disagree with the stomach. In two patients one drachm frequently gave rise to nausea, if taken upon an empty stomach, while two or even three drachms could be taken with impunity by the same persons soon after meals.

In fifteen cases the appetite either remained good, or became so during its administration; and in seven the appetite was either bad at first, or was lost under its use. In eight of these fifteen cases the increase of appetite was fairly attributable to the chloride; but in four out of the seven the salt was as fairly chargeable with its loss; thus showing the different effect of the chloride upon different individuals. In only three cases was thirst complained of, and this was generally remedied by freely diluting the solution.

Fourteen patients visibly improved while the salt was being taken—such improvement consisting principally in the increase of strength and appetite, and the diminution of cough and other general symp-

toms; eight patients as visibly became worse in their general condition; and three seemed to remain in every respect unchanged.

In four instances there was a manifest improvement in the physical signs; in six the pulmonary or local mischief as manifestly increased; and in fifteen there was no evidence of much change either one way or the other. It was singular that by far the greater number of cases of improvement, either in general symptoms or physical signs, occurred in the male sex.

Thirteen of the patients increased in weight—the minimum increase being one pound, and the maximum six pounds; six lost weight—the greatest loss being three pounds, and the least one pound; and in six the weight remained as nearly as possible stationary.

A large amount of chlorides was always found in the urine of those who were taking the salt; but so little in comparison with the quantity administered, that much must have either passed off by the bowels or remained in the system. No unusual amount of diarrhœa, however, attended its use. The search after chlorides led to the discovery that the urine of all phthisical spatients, even of those in the last stage of the disease, contains such compounds in considerable quantity.

The remarkable circumstance, so often noticed in the treatment of phthisis, that while the general health and condition are apparently improving, the local disease is nevertheless advancing, presented itself in two well-marked instances.

In estimating the effect of remedies, particularly in hospitals—and in none more so than in that at Brompton—it is necessary to make proper allowance for the influence of concomitant circumstances. Improved diet, rest, hygiene, and hope, have a wondrous effect upon every kind of disease; but after carefully weighing the probable action of such agencies, Dr. Cotton has arrived at the following conclusions, viz.:

1. Chloride of sodium in some cases increases the appetite, and acts as a general tonic.

2. In doses of one or two drachms gradually administered, it seldom produces either nausea or derangement of the digestive organs, or occasions any considerable degree of thirst.

3. Its tonic influence in phthisis may fairly rank with many other tonics, such as bitters.

4. It does not appear either that chloride of sodium is a substance deficient in the tuberculous crasis, or that it has any direct effect upon phthisis when fully developed.

Art. 34.—*On the prevention of Consumption by the use of Hypophosphites.* By Dr. J. Francis Churchill.

(*Pamphlet*, Churchill, 1859.)

According to Dr. Churchill, the want or undue waste of "*oxydizable phosphorus*" in the animal economy is one at least of the essential conditions of phthisis, and the real remedy is to supply this

waste or want by *hypophosphites*. "My anxiety," says the author, "is that the hypophosphites should be brought, as speedily as possible, into universal use, as I *know* that they will prove as sure a remedy in consumption as quinine is in intermittent fever, and as effectual a preservative as vaccination in smallpox." This is very strong language, but it is used advisedly.

"This assertion no longer rests solely upon the thirty-four cases with which my discovery was ushered into the world in July, 1857. I can now appeal to the results of upwards of one hundred and fifty detailed observations of the disease collected during the past year, at my public dispensary, rue Larrey, Paris, where any member of the medical profession, who has wished to take the trouble, has had full liberty to examine, without reserve, both my patients and the records of their cases. To these might be added almost an equal number treated in my private practice. In no single instance have I found the remedy to fail in its effect, or indeed not to produce even more benefit than could have been at first expected from it, if the degree of injury already sustained by the lungs, previous to the use of the treatment, be taken into account.

"Similar results have, since the publication of my discovery, been announced by Professors Parigot of Brussels, and Maestre de San-Juan of Granada, in Spain, also by Drs. Jacinto Le Riverend, and Galvez, of Havana, and Reinvillers, of Paris. It is true that by other practitioners, in still greater numbers, the remedy has been declared useless or even dangerous; but, in every instance in which more than a bare assertion has been published, it would be easy for me to show that not only have these latter observers neglected to follow the rules I have stated to be necessary to ensure success, but have in fact violated the most elementary principles of scientific research. I will mention but one instance.

"In February of last year, after a trial in London, at the Brompton Hospital for Consumption, the hypophosphites were declared to be utterly useless, upon the following grounds:—

"The remedy was used for *one fortnight* in twenty cases, of which *eight* are admitted to have improved during that period. It is *assumed* however that this improvement was owing to change of diet and regimen, because, after leaving off the hypophosphites, the patients, it is said, were found to improve more rapidly under the use of cod-liver oil and tonics than they had done before. Now, it will strike every one that the trial of a remedy for consumption during *one fortnight only* looks very much like a sham, and the suspicion is confirmed by the haste with which the experiment was left off, not only in the cases which were stated not to be mending, but also in those which were allowed to have improved. As if farther to perplex the matter, no time was allowed for the effects of the hypophosphites upon the system to work off, but cod-liver oil was administered without any interval, and for it alone is claimed the continuance of the improvement which is stated to have been observed. We are not told, however, how long this improvement was kept up after the discontinuance of the hypophosphites, and the same discreet silence has, to

this day, been observed with regard to the ultimate issue of almost all the cases. All we are told is that: Two of the patients ultimately died, while another it is confessed felt so much better, after the use of the hypophosphites *alone*, that he refused to take anything else, and rather than do so, left the hospital. Upon such facts as these, I feel that all comment would be superfluous.

"I do not hesitate to assert that every refutation of my views which has yet appeared rests upon no better foundation than the preceding."

The effects of the hypophosphites as a prophylaetic are not less encouraging: thus, if "the patient takes daily about ten grains of the hypophosphite of lime or of the hypophosphite of soda, he will usually find all the symptoms disappear in a period varying from a few days to a month, and, by continuing the occasional use of the remedy, he will speedily find himself in the enjoyment of such health as he perhaps had never known in his life before.

"Ten grains daily will be the *safest* dose for an adult male, though sometimes double that quantity must be given to produce the proper effect.

"For females, particularly if nervous and delicate, and for children, the dose must usually be much smaller. The younger and the more sensitive the patient, the more easily is he influenced by the remedy. The dose should therefore be decreased in a higher ratio than the age of the subject. For the *prophylactic* treatment of infants, it will be advisable seldom to exceed *one fifth* of a grain every second or third day.

"After the remedy has been used for about a week or ten days, it should usually be omitted for three or four days together, and then resumed, to be again left off after the lapse of another period like the first. It should be thus continued from time to time as long as it may appear necessary; remembering, as the patient improves, to increase the intervals during which the remedy is omitted. It should be left off immediately if the subject experience any feeling of fulness of blood with a determination towards the head, any sensation of giddiness or singing in the ears, and especially if there be any bleeding of the nose, however slight,

"The hypophosphites (except in some few cases) should not be used during the acute stage of any inflammatory disease of the lungs, whether primitive or supervening upon phthisis.

"These directions will be found sufficient in the great majority of instances, but it would be impossible for me to go into the details necessary for the treatment of different temperaments and constitutions, without trespassing upon your indulgence to a much greater extent than might be found convenient. I wish, however, before I conclude, to describe the manner of preparing the salts in a pure state, as the greater quantity of what is sold under the name of hypophosphites is not only useless, but often positively injurious. One means of avoiding this difficulty would, no doubt, be for me to provide or to recommend some one particular sample. I have already given my reasons for not doing so. As, however, the use of the

pure salts is absolutely indispensable, the following details will prove of service.

"A tin vessel, large enough to hold from two to four gallons, and about twice as deep as it is wide, should be half-filled with a moderately thick lye, formed by dissolving pure quick-lime obtained from white marble. To this must be added four or five sticks of phosphorus, and the whole kept boiling gently for about twelve hours. Care must be taken to restore the water which evaporates, and to keep up the supply of phosphorus whenever it appears to be deficient, which will be known by the liquid ceasing to evolve phosphuretted hydrogen. The quantity of phosphorus consumed will depend upon the size and form of the vessel, the rate of boiling, &c. At the end of twelve hours, or sometimes sooner, the liquid is allowed to cool and then filtered clear. A current of carbonic acid gas is afterwards passed through it until at least a large portion, or better still, the whole of the precipitate which at first forms, is redissolved. The liquid is then boiled a second time to expel the excess of carbonic acid, and, after cooling, again filtered clear. Lastly, it is evaporated to dryness in a water-bath, or simply boiled until a film begins to form, when it is set aside to crystallize. The salt thus prepared contains the pure hypophosphite of lime, with perhaps a slight trace of the phosphate and carbonate, which are not injurious, while it is rid of all excess of free lime, which is highly so.

"The soda-salt is formed by adding carbonate of soda to a solution of hypophosphite of lime, *taking care to employ an excess of the latter.* The presence of even a small quantity of carbonate of soda will be found to modify materially the therapeutical effect of the hypophosphite. Any sample in which there is a mixture of carbonate should therefore be rejected.

"The above mode of preparation is not the cheapest nor the most scientific, but it is the easiest, and the best adapted for general use.

"Either the lime or the soda-salt may be used, though in certain individual cases, which I cannot now stop to explain, a preference should be given sometimes to the one and sometimes to the other.

"The salt selected should be taken either dissolved in half a tumblerful of milk, or in an equal quantity of water, which may be sweetened to taste.

"The best time for administering it is at breakfast, *along with the food.* In this state of dilution, the pure hypophosphites are, if anything, even less tasteless than an equal quantity of common salt.

"No other drug or medicine should be used at the same time, unless to fulfil some special indication and by the express order of the physician.

"The salts of lime and soda are the only preparations which I would recommend for use, as preservatives, though sometimes, in the curative treatment, those of potash, ammonia, iron, and quinine, may be employed with advantage.

"Lastly, as a general caution, I may add that if the hypophosphites

have been taken for two or three weeks in sufficiently large doses without producing any improvement in the patient's appetite, strength, or general appearance, this will, upon due investigation, be found invariably to depend upon one of the causes I have already pointed out."

Art. 35.—*Case of pulsating Empyema.* By Dr. Heyfelder, of St. Petersburg.

Oesterreisch. Zeitschrift, No. 48, 1858; *Gaz. Hébdom.*, July 22, 1859.

The pulsation in this case, which is one of encysted empyema following upon sub-acute pleurisy, may have been derived either from the heart itself or from the ascending aorta.

Case.—A druggist, æt. 46, after suffering for two months from symptoms indicative of sub-acute pleurisy, noticed a small, resisting, pulsating tumour in the second right intercostal space, close to the sternum. At times this tumour became much more prominent, and at times it disappeared almost altogether. The pulsations were synchronous with the pulse. Many medical men declared the tumour to be aneurismal. Dr. Heyfelder saw the patient in June, 1857, and found him pale, emaciated, and with his breathings quick and oppressed. The tumour had considerably increased in size, and at one point it appeared to be on the eve of bursting. It became distinctly more prominent during expiration, and particularly during coughing. Over its surface, and for some distance around, the sound on percussion was dull. No souffle could be detected on auscultation. Fluctuation was very distinct. The tumour, moreover, could be emptied by pressure, and when this was done there was a corresponding bulging in the intercostal spaces near at hand. Dr. Heyfelder, diagnosing empyema, introduced a tenotomy knife, and evacuated about eight ounces of pus, with the effect of relieving the respiration, and diminishing the size and pulsatory character of the tumour. After this, matter collected again, and the abscess opened spontaneously, and remained open for some time, discharging freely all the time. In the end, the discharge ceased, a depressed cicatrix occupied the place of the tumour, and the only relics of the previous mischief were, a slight degree of dulness and a somewhat feeble respiratory sound in the part.

Art. 36.—*On the treatment of Empyema by Drainage.* By Dr. Goodfellow, Physician to the Middlesex Hospital; and Mr. Campbell de Morgan, Surgeon to the Middlesex Hospital.

(*Proceedings of Royal Medical and Chir. Soc.*, June 14, 1859.)

The object of this communication was to show the advantage to be derived in many, if not in all, cases of empyema, from making two openings in the operation of paracentesis thoracis, and establishing a free communication between them and between the cavity of the pleura and the external air, by means of an india-rubber tube, perforated at frequent intervals in the way recommended by Chassaignac for the healing of sinuses. The marked success attending the adoption of this plan of treatment in the two cases read to the Society seemed to afford strong evidence of its value.

The first case was that of a boy, aged seventeen years, who had been suffering for upwards of five years from an opening in the right side of the chest, which communicated directly with the pleural cavity, and, for a great part of this period, opened into a cavity in the lung, the result of an abscess. The history of the case, as described in the paper, showed that at the age of twelve years this boy had an attack of pneumonia after measles, which terminated in abscess; that in a short time this abscess burst into the cavity of the pleura; and that ultimately a spontaneous opening occurred in the chest-wall, through which a great quantity of pus, of a very offensive character, continued to be discharged for the five years preceding the adoption of the operation above recommended. During the whole of this period the boy had been for the most part confined to bed; and notwithstanding the treatment that had been adopted at home and in a public hospital, but little improvement took place in his general health, and no progress whatever was made towards healing the disease in the chest. The counter-opening was made, and Chassaignac's tube inserted on the 5th of January last. In a few days a marked change for the better was observed; the discharge from the opening, instead of being thin, unhealthy, and intolerably stinking, was thick, much reduced in quantity, and nearly free from odour; his general health rapidly improved; the œdema of the legs, with which he had been affected for some years, quickly diminished; and he was able to sit up for several hours every day. In three months after the operation he was dismissed from the hospital. He was then able to walk a considerable distance without difficulty, and has since been doing well.

The next case was that of a man, aged twenty-four years, who for nearly three years had suffered from tubercular disease of the left lung, followed by pneumothorax and empyema. There was every reason to believe that the empyema had been present for more than a year, and that a considerable quantity of fluid was in the pleural cavity. The greatest impulse of the heart was felt about two inches below and an inch to the external aspect of the right nipple. The first opening was made by Mr. De Morgan, on the 21st of January, between the fifth and sixth ribs; and the sero-purulent matter was allowed to drain away gradually by partly plugging the canula. In twenty-four hours upwards of eight quarts had escaped, the opening still freely discharging. Four days after, a second opening was made, and the perforated tube introduced. But it was found, after about ten days, that the counter-opening had not been made sufficiently low down in the chest-cavity, for the pus remained so long as to become decomposed. A second counter-opening was made as low down as possible; after which the discharge soon lost its offensive odour, quickly diminished in quantity, and the general health so rapidly improved that he was able to get up in a few days; and, on the 5th of April, he was able to return to his home. Since his discharge, he has continued to improve in health and strength, and is now (June 16th) able to perform a day's work at an easy occupation.

The benefit to be derived from the plan of "drainage," by means of Chassaignac's tube, is obvious. The openings in the chest-wall are always free; the matter is discharged drop by drop as it forms, so

that if the tube be suitably placed, there is never any collection whatever of pus in the thorax; no time is given for decomposition; and the pus is, therefore, discharged in a healthy and pure state. The evils arising where only one opening has been made need not be pointed out. They are sufficiently manifest in the two cases described in the paper.

The operation is a very simple one. A puncture with a trocar, or a simple incision, may be made into the cavity of the chest at the usual place—between the fifth and sixth, or sixth and seventh ribs—or indeed in any convenient situation. A firm, long, iron probe, somewhat bent, is then passed through the opening, and directed towards the lower and back part of the cavity—the lower the better. If the end of the probe be made to press against the sides of the thoracic walls, it can be felt from the outside through the intercostal spaces, though, perhaps, obscurely, owing to the thickness and toughness of the false membrane within. The lowest and most appropriate site in which the probe can be felt having been selected, an incision is made upon the end of the probe, which is then brought through the opening thus made. A strong piece of silk thread is passed into the eye of the probe, and drawn through the two openings; and the drainage-tube, being firmly tied to one end, is then drawn through by means of the silk; the ends of the tube are tied together, and the operation is completed.

The plan of treatment by "drainage," first adopted by Chassaignac, has been largely and beneficially put in practice at the Middlesex Hospital in deep-seated and extensive collections of matter. The operation consists in passing through the abscess a fine india-rubber tube, perforated at small intervals; the ends of the tube, which project from the opposite sides of the abscess, are then tied together, and the matter is allowed to drain away, and to discharge itself through the perforations made in the tube.

ART. 37.—*On some of the effects of primary Cancerous Tumour within the Chest.* By Dr. BUDD, Physician to King's College Hospital.

(*Proceedings of the Royal Med. and Chir. Society*, May 24, 1859.)

The object of this paper is to call attention to the changes that are produced in the nutrition of the lung by a primary cancerous tumour involving its root. Primary cancer within the chest usually forms a single, compact, nodular mass, commonly occupying the mediastinum, and invading, to a greater or less extent, one of the lungs—in the great majority of instances, the *right*, the other lung remaining uninfected.

The author gives the details of three cases of this kind that have fallen under his observation in King's College Hospital, in all of which the tumour involved the root of the right lung. In all these cases, remarkable changes of inflammatory origin were found in the chest. These changes consisted, in the order of their frequency, of:

1. Firm adhesion of the lung to the walls of the chest by thickened pleura.

2. Inflammatory condensation of the lung, where it was not invaded by the cancer, proceeding, in all of the cases, to more or less disorganization of the pulmonary tissue, and the formation of pockets of pus.

3. In one of the cases—the case in which the tumour had attained the greatest size and spread furthest towards the left side—adhesion of the pericardium, and an abundant effusion of lymph on its outer surface.

The extent of change in the lung in the different cases was greater as the tumour was larger, and involved more completely the root of the lung; and in all the cases the left lung was free from adhesions, and presented no other changes than those which result from recent congestion. The question is then discussed, how these changes of inflammatory origin were caused; and from a review of the circumstances of the cases, the author considers it most probable that they resulted from the tumour involving and destroying all or great part of the pulmonary nerves, and that consequently the inflammatory diseases of all the tissues of the lung in these cases is analogous to the destructive inflammation of the eyeball that results from division of the fifth nerve within the skull. It is remarked that the lung resembles the eyeball in this: that all the nerves which supply it are comprised at its root in a very small space, so that they can there be destroyed or paralysed—and the organ, in consequence, be deprived of all nervous influence—by disease of no very great extent.

Primary cancer involving the root of the lung is a rare disease. The three cases related above are the only instances of the kind that have fallen under the author's observation in King's College Hospital since it was first opened for the reception of patients in 1840. The disease is, however, so peculiar in its effects that—as was shown by Dr. Stokes, in an admirable paper on this subject published in the 'Dublin Journal of Medical Science' for 1842—a diagnosis of it may sometimes be made with much confidence. The elements of diagnosis consist:

1st. In the signs that give evidence of the existence of a tumour.

2dly. In the absence of strong pulsation and of the morbid *bruits* that usually attend aneurismal tumours.

3dly. In the occurrence of hæmoptysis and other signs, showing that the *lung* is involved in the disease.

4thly. In a distended and varicose condition of the superficial veins of the chest.

A cancerous tumour usually affects the venous circulation and the nutrition of the lung more than an aneurismal tumour of the same size, because it grows into and blocks up the veins, and converts into cancer the other tissues which it embraces in its growth.

ART. 38.—*On destructive changes in the Lung from interference with the Pneumogastric Nerves and Pulmonary Plexus.* By Dr. GULL, Physician to Guy's Hospital, &c.

(*Guy's Hospital Reports*, 3d series, vol. v, 1859.)

After division of the trunks of *both* pneumogastric nerves the lungs undergo destructive changes; but if only *one* nerve be divided, the damage to the lung is not so certain—a fact which depends upon the communication between the two vagi in the pulmonary plexus. The results, however, are different when the nerves and their plexus are injured by disease lower down at the root of the lung, because not only are there larger branches of the sympathetic at that part, injury of which would have an influence upon the morbid processes, but because the branches going to either lung may be individually implicated, and, consequently, the corresponding lung be directly deprived of its nervous supply. This is well seen in the following cases:

CASE 1.—*Aneurism of the left side of the arch of the aorta pressing upon the left pneumogastric nerve and upper part of pulmonary plexus; sloughing pneumonia of the left lung.*

George R—, æt. 35, admitted into Guy's Hospital, under the care of my colleague Dr. Addison, March 25th, 1850, a sailor, and up to the age of 33 always enjoyed good health. At that time he had a sudden attack of paralysis of the right side, with loss of speech. He gradually recovered, but was never again able to read or write, both of which he did tolerably well before the seizure. His face was thin and haggard, expression anxious; body emaciated; voice husky; respiration hurried, and impeded by laryngeal obstruction. Breathlessness. He complained that for a month he had had an uneasy tickling sensation in the throat, causing frequent cough. There was no pain on either side of the chest. Some difficulty in deglutition, more for fluids than for solids. Skin hot and sweating. Tongue furred. Pulse 100, small and feeble. The left side of the chest was dull, on percussion, throughout. No tactile vibration. No vesicular murmur. No bronchial sounds, except near the apex, where loud bronchial breathing was audible. Except this, the whole of the left side of the chest seemed impervious to air. The right lung appeared to be abnormally resonant. Respiration puerile. Mucous râles in larger tubes. Sputa rather abundant, muco-purulent. Under the cartilage of the second rib on the left side, a soft double (aneurismal) whiz was heard. The diagnosis was aneurism of the arch of the aorta, phthisical disease of the left lung, and pleurisy. He died exhausted on the 5th of April.

Post-mortem examination.—Right lung healthy. Left lung irregularly consolidated; the tissue gray. In the upper lobe, irregular cavities formed by the breaking up of the tissue, and communicating with the bronchial tubes. The tubes themselves were filled with muco-purulent secretion. Some effusion into the pleura. Heart healthy. At the arch of the aorta, on the left side, there was an aneurism of the size of a large orange, which had extended downwards and backwards, and compressed the left pneumogastric nerve and the adjacent branches of the pulmonary plexus. The posterior part of the sac was formed by the bodies of the first, second, and third dorsal vertebræ. The sac itself had not burst. In the fissure of Sylvius, on the left side, and covering some of the convolutions of the island of Reil, was a tough,

yellowish substance, the remains of a large clot. The gray matter beneath was partially absorbed, and the yellow substance dipped down into the corpus striatum, in which there was a spot of softening.

In this case, as in the two others I have to relate, the physical diagnosis was obscured by the state of the bronchial tubes. When the nerves of the pulmonary plexus are injured, paralysis of the tubes follows, they gradually become filled with exudation, which they cannot expel, and hence are impervious to air. Besides this, as I shall have again to notice under the third case, the chest is flattened, probably from atelectasis of the pulmonary tissue, which comes on with the paralysis of the tubes. This and the dulness on percussion and absence of respiratory movement may lead to the diagnosis of chronic pleuritic effusion undergoing absorption, when on post-mortem examination it may be found, as in the above and following cases, that there is a very different state of things, namely, obstruction of the paralysed tubes and chronic pneumonia.

Case 2.—*Cancer of the œsophagus invading the trunk of the right pneumogastric nerve and the branches of the pulmonary plexus behind the right bronchus; enlarged bronchial glands; ulceration of right bronchus; pneumonic consolidation and commencing gangrene of right lung.*

James R—, æt. 45, admitted into Guy's Hospital, under my care, November 21st, 1854. For some weeks he had had difficult deglutition and pain under lower third of sternum, and at the ensiform cartilage. Emaciation. Cough. Peculiarly offensive muco-purulent expectoration, streaked with blood. Dulness, on percussion, from the lower angle of the scapula to the base of the lung on the right side. Absence of respiratory sounds at the seat of dulness, mucous crepitation and bronchophony above. Puerile respiration over left side. He died on the 29th.

Post-mortem examination.—At the commencement of the œsophagus there was epithelial cancer, ulceration extended down as low as the root of the lungs, but neither the lungs themselves nor the pleura were invaded. The areolar tissue around the œsophagus was infiltrated by the cancer, and especially on the right side, about the right bronchus. The right pneumogastric nerve was at this part of its course implicated in the disease, so that it could not be traced to its distribution. The right lung was extensively consolidated, its lower lobe was infiltrated with a grayish or rather greenish sero-purulent fluid, having an offensive odour. The mucous membrane of the bronchi on this side was intensely congested. The tubes obstructed with muco-purulent secretion. The bronchial glands were enlarged by cancerous deposit in them. From one of these, lying on the right bronchus, the cancer had extended into the tissue of the tube.

Left lung healthy. Larynx healthy. Heart and other viscera healthy.*

Remarks.—It could not in this case be so unequivocally inferred, as in the preceding, that the destruction of the lung was alone due to disease of the nerves, for the cancerous affection had extended to the bronchial glands and also invaded the tissue of the bronchi. It may therefore be supposed that there was obstruction of the absorbents and of the bronchial veins, which would influence the result. Although in similar cases the possibility of such complications and their operation cannot be overlooked, there still remains the fact that the nerves were in this case invaded and destroyed, accompanied with those changes in the pulmonary tissue which would follow paralysis of the bronchial tubes.

* This case is recorded by Dr. Habershon, 'Observations on Diseases of the Alimentary Canal,' Case xx.

Case 3.—*Fibrous thickening (malignant?) of the tissue in the mediastinum and around the right bronchus (but not narrowing or compressing it); implication of the right pneumogastric nerve and branches of pulmonary plexus; consolidation and purulent infiltration and sloughing of the pulmonary tissue; small bronchial tubes much dilated and full of muco-purulent secretion.*

Joseph J—, æt. 61, admitted into Guy's Hospital, under my care, January 12th, 1859. He was much emaciated, and had a cachectic aspect. The report he gave of himself was that he had been ill for four months, and that his symptoms began with sharp pain in the right side, without cough. On examining the chest, the right side was found entirely dull on percussion, but the natural resonance of the sternum remained. The whole side was flattened, and the infra-clavicular space depressed. On auscultation, no respiratory murmur nor any bronchial sounds were audible at any part. There was no vocal resonance nor tactile vibration. He had never spat blood. The left side was resonant on percussion throughout. Bronchial râles in the larger tubes. Expectoration muco-purulent, without odour. The diagnosis was chronic pleurisy, with effusion undergoing absorption. Malignant disease was suspected, but no enlarged glands could be found in the axilla or neck, nor were there any symptoms of pressure on the parts in the mediastinum, causing difficult respiration or deglutition. He died on the 19th.

Post-mortem examination.—Old and universal adhesions of right pleura. Fibrous thickening and induration (malignant?) around the bronchus, not narrowing or compressing it, but implicating the trunk of the right pneumogastric nerve and the branches of the pulmonary plexus. The trunk of the nerve was so entirely confounded with the new tissue that it could not be traced through it. The smaller divisions of the bronchial tubes were universally dilated up to the periphery of the lung. They as well as the larger tubes were choked with muco-purulent secretion. The pulmonary tissue was consolidated into the state of gray and iron-gray hepatization. In the lower part of the upper lobe was a large sloughing cavity, from the breaking up of the indurated tissue. The pleura pulmonalis was thickened to the extent of the eighth of an inch in parts. The left lung was healthy. The bronchi on this side were free. Heart and abdominal viscera healthy.

Remarks.—This case affords an excellent illustration of the effects which are referable to paralysis of the pulmonary plexus on one side—accumulation of muco-purulent secretion in the paralysed bronchi, subsequent dilatation of the tubes at their peripheral distribution, concomitant exudation into the air-cells (hepatization), and at length disintegration of the tissue. It is also worthy of notice that the whole volume of the lung was diminished, as shown by the flattening of the chest and falling in of the infra-clavicular space. This might be partly referable to the contraction of pleuritic adhesions, but it is probable that it was chiefly caused by that atelectasis of the tissue which followed upon paralysis of the bronchi. The steps of this process have been made out on the lungs of animals after the divison of both pneumogastrics. It seems that the capillaries of the lung, becoming congested, encroach upon the space of the air-cells, and produce an airless and dense state of the pulmonary tissue, with reduction of volume.

ART. 39.—*Curious case of Gangrene of the Lung, caused by the presence of a foreign body.* By Dr. E. J. FOUNTAIN, of Davenport, Iowa.

(*North American Medico-Chir. Rev.*, Sept., 1859.)

In this remarkable case the gangrene of the lung led to empyema, and the empyema ended by opening into the colon through the diaphragm. The gangrene was caused by the head of the thigh-bone of a chicken slipping into the windpipe, and becoming lodged in the right bronchial tube. The end was satisfactory, for the foreign body was eventually expelled, and the patient recovered. Dr. Fountain discusses the propriety of tracheotomy, and very properly, we think, decides against the advisability of the operation in this particular case.

CASE.—"I was called on the 29th of November, 1858, to see the patient, Alexander Barrow, an interesting lad, æt. 10, whose health had been generally very good, though of a delicate constitution. I found him labouring under a severe cough, of a dry, hoarse, and resonant character, occurring in frequent paroxysms, and unattended with any expectoration. On placing the patient in an upright position, to remove his garments, for the purpose of examining his chest, symptoms of fainting appeared, requiring an immediate resort to the recumbent position; this induced me to remark that this difficulty must be of a serious character, but I could not as yet even guess at its nature. I proceeded carefully to examine his chest, the first result of which increased the mystery of his case. Everywhere over the left lung the respiratory murmur was clear and distinct, and entirely free from the slightest crepitation or the least symptom of disorder. The upper lobe of the right lung appeared equally healthy, but in the middle and lower part there was an entire absence of all respiratory sounds. There was an appreciable degree of dulness over all this region, but more marked anteriorly, and pain was felt on percussion at a single point near the margin of the fourth rib, a little to the right of the sternum. I now inquired more particularly into the history of the cough, and learned that it had existed since he was suddenly taken with a violent paroxysm of coughing at the dinner-table, on the 19th of the same month, ten days before coming under my observation. This gave me a clue as to the nature of his difficulty, and I inquired very particularly concerning the circumstances relating to this occurrence. The patient stated that he had bitten off the round head of the thigh-bone of a chicken, and at the moment of doing this he became strangled by some crumbs of corn-bread which he also had in his mouth at the same time, and with the first effort of coughing the bone was drawn into his throat. This was followed by a long and violent paroxysm of coughing; during the remainder of the day it continued most of the time, and in the intervals his breathing was accompanied with a hoarse, croupy sound. The cough had continued unremittingly from that period, yet, very singularly, it had excited no suspicion in the minds of his parents of the probability or danger of the bone having entered the trachea. The suddenness of the attack, with the circumstances related, taken in connexion with the symptoms revealed by auscultation, immediately impressed my mind with the belief that his cough was caused by the articulating head of the thigh-bone of a chicken lodged in the right bronchial tube immediately beyond the first branch which is given off to supply the upper lobe of the lung. On the day

following I examined his chest very carefully with the aid of Cammann's double stethoscope, the result of which more than confirmed the opinion which I had entertained the evening previous. As before, I found the left lung everywhere in a perfectly healthy and normal condition, but the respiration puerile. The respiratory murmur was perfectly clear in the upper part of the right lung, but on passing downward with the stethoscope, I found that all sounds suddenly ceased about the fourth rib. Above this line the voice could be heard through the stethoscope as from a healthy lung; below, it was altogether wanting, the voice reaching the ear only from without. There was some degree of dulness also below this line, and at a point corresponding to the root of the lung there was pain on percussion. From these symptoms I concluded that some foreign body had lodged in the right bronchial tube, between its first and second bifurcation, and it was further evident to my mind that the substance must be something which was of such a shape as to completely fill the calibre of the tube. The round and polished head of a chicken leg-bone would, by its size and form, exactly accomplish this, and the history of the origin of the cough rendered it in the highest degree probable that this constituted the obstruction, and was the cause of all his trouble. To the parents I stated this as my unqualified opinion, and expressed my apprehension that it would be a serious case, unless in some way the bone could be expelled by coughing, or otherwise removed. The operation of tracheotomy I thought would be of no benefit, as the substance was fixed in a position too far to be reached by any instrument with which extraction might be attempted with any prospect of success. Moreover, my diagnosis of the case was received with so much incredulity, that I felt certain that any proposition of an operation would have been immediately opposed by the family and their friends. I concluded that it would be best to trust almost entirely to nature, with the hope that it would be expelled by coughing, after the bone should become loosened from its position by partial decomposition of its substance and suppuration of the parts surrounding it. I prescribed an expectorant and tonic mixture, containing iodide of potassium and the compound tincture of bark, to promote expectoration, and thereby favour the loosening and expulsion of the bone. To facilitate this, I also directed the patient to rest occasionally, during the paroxysms of coughing, with his arms and face upon the carpet, while his body remained upon a low couch. The directions were repeatedly observed, but no benefit resulted from the attempts to favour the removal of the body by aid of gravity. After a few days he began to expectorate a little, and evident signs of improvement followed. By examination of the chest, it appeared that the increased bronchial secretion had loosened the bone a little from its previously firm position, as a feeble current of air could be heard to pass by the point of obstruction. This improvement in his symptoms encouraged in my mind the hope that, after partial decomposition of the bone by absorption, the solid nucleus of osseous matter would be expelled by an effort of coughing. The expectorant and tonic treatment was continued unchanged. For about three weeks he slowly improved in strength, and regained his natural buoyancy of spirits; but still the cough remained persistent and unchanged in character. During this time I called in, at different times, Drs. Alder and Baker, both of whom agreed with me fully in my opinion of the case, and also in the propriety of trusting to the chances of a natural expulsion of the foreign body from the place in which it was lodged. By the 28th of December his symptoms became more unfavorable. Loss of animation and general strength was soon followed by complaints of pain in the hip, as he expressed it, leading his parents to think he was suffering from a rheumatic

difficulty. On visiting the patient the day following, I found him very much altered in appearance, which was expressive of great suffering.

"The pain which he referred to the hip proceeded from a diffused tumefaction over the lower border of the ribs. The tenderness over this region was so great that he could not tolerate a thorough examination. The slightest touch would provoke resistance and cries of pain. His breath was fetid, and the cough continued of the same character, only the paroxysms were more frequent. The symptoms revealed by auscultation were unchanged, except an increased amount of dulness and tenderness over the submaxillary region. I gave it as my opinion that an extensive abscess had formed in the lung, resulting from a gangrenous condition of the parts below the point of obstruction, and that the matter was emerging from the chest in an unusual way, by passing through the attachments of the diaphragm, and forming a tumour over the border of the ribs, simulating in appearance an abscess of the liver. The pain increased in severity as the swelling advanced. The patient rested in a semi-recumbent position, with the thighs strongly flexed upon the body, by which the parietes of the abdomen were relaxed, and the pressure over the tumour diminished.

"In consultation with my friends at this time, it became a question whether this abscess was from the liver or the lungs, and at times some doubt was entertained as to the source of the tumour. The patient's strength failed rapidly. The fetor of his breath was arrested by the administration of the chlorate of potassa, and the bark and iodide of potassium were prescribed as an alterative and tonic.

"January 1st.—The tumour now increasing antero-posteriorly, and presenting no appearance of pointing. Pain and tenderness over the whole of the right side below the fourth rib. These facts confirmed me in the opinion that the tumour was formed by purulent effusion within the chest. Prognosis very unfavorable. On the night following I was sent for in haste, and found him sinking rapidly, and in the most extreme agony of pain. An expression of intense suffering escaped with almost every breath, and the slightest effort to change his position was always attended with such cries of agony as to unnerve the stoutest heart. To his parents the trial was peculiarly severe, and called forth from his friends the warmest sympathy and the most devoted attendance. At this time his suffering was partially relieved by opiates, but during the night his condition appeared extremely critical, and hardly any expectation was entertained of his recovery. On the day following Dr. Grave was called in consultation. By him the difficulty was regarded as an abscess of the liver, and he appeared altogether incredulous of the existence of any foreign substance in the lungs. Fomentations were applied to the side very assiduously, to the great annoyance of the patient, as the slightest pressure upon the side or movement of the body occasioned immediate and severe pain. This was considered necessary, to favour the pointing of the supposed hepatic abscess. Internally the consulting-physician prescribed cherry-laurel water, and directed the use of opiates to be discontinued. For a time my opinions and advice were disregarded, and the case was treated as an abscess of the liver, while the constant cough and peculiar symptoms of disorder of the lungs were quite overlooked, or considered unimportant. As the influence of the opium passed off, his sufferings returned as severe as before, and for several days and nights he had no respite from pain of the most agonising character. Opiates were now gladly resorted to again, and followed by immediate relief. He was allowed to return to the use of wine and bark, and on the 7th I added the compound syrup of the phosphates. During this time he was becoming more emaciated, and it was apparent that he was gradually failing.

No pointing of the tumour had yet appeared; on the contrary, it extended transversely across the body, along the lower border of the ribs, reaching at this time nearly to the spine, and measuring ten inches in its antero-posterior diameter. No fluctuation could yet be detected, but on the 10th an exploring operation was decided upon, and the day following, assisted by Drs. Alder and Grave, I introduced an exploring needle, along the groove of which a drop of pus immediately appeared. Withdrawing this, I introduced a small trocar and canula, and drew off nearly a pint of extremely offensive pus. The odour was peculiarly sickening and pungent, and identical with that which I have noticed proceeding from gangrene of the lung, when revealed by post-mortem examination, only of far greater intensity.

"Fearing there might not be an adhesion between the peritoneal covering of the tumour and that of the abdominal parietes, I opened the tumour by a puncture merely; and, after the evacuation of the pus, I closed the wound tightly by adhesive plaster. By the time the pus should reaccumulate there would necessarily be an adhesion about the point of puncture, through which a free opening could be made without danger of allowing the pus to escape into the cavity of the peritoneum, provided an operation should be again necessary; for I entertained the opinion that it might soon find a natural exit from the body by ulceration into the colon, upon the angle of which I thought the tumour to be impinging. The extensive tumefaction had subsided only in part by the discharge, after which it began to enlarge again in the same form as before. We decided to operate again on the 14th, but on the morning of this day he suddenly began to pass by the bowels pus of precisely the same odour and character as that removed from the tumour. Five or six evacuations followed in rapid succession, each one filling the house with the same extremely offensive odour. As these evacuations were going on the tumour subsided, and the patient became greatly relieved of his previous suffering. It was at once evident that the sac had opened into the colon; and as this would be at the deepest and most dependent part of the tumour, we believed it would permit a more complete and constant escape of the pus than by an external opening; and from this consideration I was disposed to regard the occurrence as favorable, and affording the patient a little better chance of recovery. In the mean time the cough continued unremittingly the same, and auscultation still revealed plainly enough to my mind the fact that some foreign body still obstructed the respiration in the right lung. As the discharges continued, the pain gradually subsided, and soon a slow and gradual improvement was apparent. The discharges of pus by the bowels continued about a week, each evacuation being preceded by a sharp pain in the region of the arch of the colon on the right side. About this time the patient had a more than usually violent paroxysm of coughing; after which he appeared much relieved, and the cough almost entirely ceased. On examining the chest, I found the air entered more freely into the lung than previously; and these facts led me to infer that the bone had either been loosened in its position, or it had been coughed up and swallowed. The tumour first subsided over the lateral region, leaving an elevation posteriorly over the lower part of the chest, extending nearly to the spine, and mounting upward over the ribs. This convinced me of the correctness of my diagnosis as to the cause and source of the abscess, and it was further confirmed by the facility with which the fingers could be inserted under the ribs, and pressed, without producing any pain, upon the lower margin of the liver. There was the same dulness over all the inferior portion of the chest, and some tenderness on percussion. The discharges of pus gradually ceased, but the cough soon returned again as before. In the mean time the patient steadily improved in strength, and ap-

parently was rapidly recovering. As soon as he was able to travel, the family left for the East early in February, by which time the patient could walk about the house without pain, and with considerable freedom of motion. I was still as positive as ever that all his symptoms resulted from a bone in the lungs, and expressed the opinion that, if still remaining, it would probably be in part absorbed, and the remainder might yet be coughed up at some future time.

"The remaining history I will give by extracts from letters written to me by Mr. Barrow, from Baltimore. The first was dated March 3d, 1859, of which the following is a portion :

" 'Believing that you will be interested in the progress of Alexander's case, I hasten to inform you that your diagnosis of his disease has proven correct. *He has thrown up the bone.* The substance when discharged was about the size of a common garden pea, and *solid bone*, and was undoubtedly a part of a chicken leg-bone. It was very much decomposed, but in its present dry state still shows the grain of the bone. After he left Davenport, he improved rapidly in strength, and fattened up very much, but his cough still continued. He has *not coughed at all* since the bone was expelled, and I now have hope of his ultimate recovery.' At the time of writing this he was having symptoms of intermittent fever.

"On the 9th of April I received from Mr. Barrow another letter, enclosing the bone, 'or rather,' he writes, 'the little that is left of it; it having been much broken and wasted by handling. After I wrote you, Alexander continued quite sick for four or five days, with high fever and some inflammation of the right lung. He is now rapidly recovering, and seems quite sound, not a vestige of cough remaining.'

"On the 19th of May, he writes again as follows : 'Since the last attack, of which I wrote you in a former letter, Alexander has been steadily growing in health and strength. He is, of course, still quite weak in that lung, and unable to engage in violent plays, but there is every prospect of his becoming a stout and hearty boy.'

Art. 40.—*The prognosis of Asthma.*

By Dr. Hyde Salter, Assistant-Physician to Charing Cross Hospital.

(*British Med. Journal*, June 18, 1859.)

The prognosis of asthma must be based partly on the actual condition of the patient, and partly on the previous history of his case. As far as relates to the actual condition of the patient, the circumstances by which our prognosis will be influenced are his age and the presence or absence of organic mischief in the heart or lungs. As far as relates to the previous history of his case, the circumstances influencing the prognosis are the duration of the attacks, (rather than their severity,) their frequency, the completeness of the recovery between them, their apparent tendency—that is, whether they appear to be getting more frequent and more severe, or less frequent and lighter,—and lastly, the length of time the asthma has existed.

1. *Circumstances connected with actual conditions.*—The influence of *age* in determining the tendency of asthma constitutes a very constant and characteristic feature in its clinical history. In young asthmatics the tendency is almost invariably *towards recovery;* whereas, in a person who is attacked with it after forty-five the tendency is generally

towards a progressive severity of the disease, and the production and aggravation of those complications by which asthma kills.

In the young asthmatic under fifteen, one may almost safely predict, barring organic disease, a favorable issue, and tell him he will most likely gradually "grow out of" his complaint. The author can call to mind, at the present time, four or five cases of individuals who have thus grown out of their malady, and are now perfectly well; but whose childhood was rendered one of great suffering by asthma. In asthma commencing from twenty to forty, age tells much less in favour of the patient, and the prognosis is doubtful; but if the lungs are entirely free from any organic complication, if there is no emphysema, and no tendency to bronchitis, the patient has, under proper management, a very fair chance of recovery. Above forty-five, the prognosis should always be guarded, if not absolutely unfavorable.

Now, why is this? Why, *cæteris paribus*, should age have such a determining influence on the tendency of asthma? Partly for obvious reasons: that in the young the powers of repair are great, in those advanced in life, feeble; that in the young the pulmonary congestion, that always accompanies asthma, completely vanishes in the intervals of the attacks; the capillaries recover their tone, and the nutritional balance of the lungs is regained; whereas in the old the engorged capillaries are slower in recovering themselves, and the pulmonary congestion hangs about the patient some time after the asthmatic spasm has disappeared, manifesting itself by a profuse mucous exudation, and a certain thickness of breathing and incapacity for exertion; if the attacks are frequent, this pulmonary congestion never entirely vanishes, and thus is produced a kind of spurious chronic bronchitis, with a tendency to aggravation by each attack, which is one of the worst and commonest complications of the asthma of the old. Another complication of asthma—dilated right-heart—is much more apt to occur in the old than in the young, and for the very reason that the dyspnœa in the old is so apt, by the generation of this spurious bronchitis, to pass from the occasional and intermittent form characteristic of pure asthma, and become continuous and permanent. As far as Dr. Salter has seen, the right side of the heart never becomes dilated by asthma, however severe the dyspnœa may be during the attacks, if the intervals between them are considerable, and the recovery in those intervals complete. It is a continued, and not an occasional and transient arrest of the pulmonary circulation that dilates the right side of the heart. It is from this fact that we see dilatation of the right side of the heart, venous stasis, and general dropsy, so much more common a result of chronic bronchitis than of asthma.

But this greater disposition in asthma to produce organic change in the old than in the young is not the only circumstance which imparts to age its determining influence on the tendency of the disease. In asthma, as in all other constitutional disorders, we have in the young much more room for hope from those changes in the type and build of the constitution which in them are so marked and striking; whereas in the old the constitution is set and fixed, and we have but little to hope on this score. Indeed, the existence of a constitutional peculiarity in a child is of itself almost a presumption that he will one day

lose it; while in an old person it furnishes a presumption equally strong that it is fixed and indelible.

Again, in an old person the probability is that the asthma has existed longer than in a young one, and the chances of recovery from asthma (as is the case in almost all diseases) are in inverse proportion to the length of time that the disease has existed.

But there is a special reason, depending on the nervous nature of asthma, that makes us sanguine of recovery in the case of the young; and which explains at the same time the greater frequency of pure nervous examples of the disease in the young than in the old. What, for want of a better name, we must call "nervous irritability," is much more marked in the young than in the old. It appears continuously to diminish from birth forwards. Sources of irritation that in the young are adequate to the production of the most violent nervous phenomena, in mature life are powerless to produce such effects. The cutting of a tooth, for example, will send an infant into epileptic convulsions; one never hears of a fit from the second dentition. A young child will grind its teeth, or even be violently convulsed, from the presence of ascarides in its rectum; but one never sees such results from worms in the adult. And thus the diminution of nervous irritability, as childhood passes to youth and manhood, may make an attack of asthma less and less prone to occur on the supervention of its exciting causes, and less intensely spasmodic when it does occur. This diminution of nervous irritability the author believes is the true explanation of that gradual recovery of young asthmatics which is so common, so almost universal.

Lastly, age influences unfavorably the tendency of asthma, not only because it is more apt in advanced life to engender organic disease, but because it is also more apt to have organic disease as its cause. The causation of asthma in youth and age is indeed very different. In age there is commonly some appreciable organic basis for it; in youth much more rarely.

The other circumstance in the actual condition of an asthmatic determining the tendency of the disease in his case, is *the presence or absence of organic disease in the respiratory and circulatory organs.* This is the most important of all the points affecting the prognosis, and is, of itself, sufficient to turn the scale. Its exact value is this: if the heart and lungs are perfectly free from organic disease, recovery is possible; if they are the seat of such organic disease as tends to engender bronchial spasm, and as is in the given case the actual cause of the asthma, recovery is *impossible.* The cause is incurable, and therefore its consequences.

2. *Circumstances in past history.*—A very important one of these is the *length of the attacks.* One of the ways in which repeated attacks of asthma damage the lungs is by the production of permanent pulmonary congestion. At each attack, the shutting off of air by the narrowed bronchules, suspends the normal respiratory changes of the blood in the capillaries; this produces capillary arrest, and this, engorgement of the whole pulmonary circulation, capillary and venous. Now this pulmonary congestion, as is the case in all derangements of vascular balance, congestive or inflammatory, becomes formidable and

chronic in proportion to the length of time that it has existed. If the attack is short, and the speedy relaxation of the bronchial tubes quickly readmits a free supply of air, the vessels are at once relieved, the blood passes on, and the transient congestion leaves no trace behind it. But it is very different if the attacks last several days, or even weeks, as is sometimes the case. Then the capillaries and venules, long distended, never completely recover themselves, their *tone* is lost, and the pulmonary congestion, manifested by chronic dyspnœa and expectoration, is permanent. This pulmonary congestion, involving as it does the bronchial tubes, and occluding them with mucus, becomes, in its turn, a source of bronchial irritation, and thus tends to excite and keep up the asthma which has caused it. The length of the attacks, therefore, has an important bearing on the prognosis, because it has an important influence in determining the production of that particular damage of the lung which is the commonest way in which asthma becomes hopeless.

The *frequency* of the attacks is another point bearing directly on the prognosis, and for the same reason and in the same manner as their duration. The more frequent they are the worse the omen. If the intervals are so short that the lungs have not time completely to recover from one attack before the occurrence of another, the omen is very bad, because the mischief of each attack being engrafted on some portion of that of its predecessor, the organic derangement is accumulative, and the case one of progressive disorganization.

Another point that should be carefully ascertained, is the *completeness of the recovery* between the attacks. The author always asks a patient, "Is your breathing in the intervals of the attacks perfectly free from any shortness or difficulty whatever?" If he says "Yes," then he knows that his attacks leave no permanent vestige on his pulmonary circulation, that it recovers itself absolutely, and that the disorganizing tendency of asthma does not in this case furnish any ground for alarm. But if he says "No," he is sure that the mischief which the attacks inflict persists, and confidently expects to find other evidence of organic disease, and forms an unfavorable prognosis.

Especially is an unfavorable inference to be drawn from the *persistence of expectoration.* Spitting is one of the worst signs in asthma. In fact, what is called "humid asthma," is neither more nor less than asthma complicated with bronchial inflammation or congestion.* Wherever there is chronic expectoration, we may be sure that the lining membrane of the air-passages is the seat of organic change. Indeed, the mucous exudation is a positive evidence of, and in its quantity a measure of, that loaded condition of the bronchial vessels which it is its object to relieve. A certain amount of expectoration after each attack, of a thick gelatinous mucus, like pellets of very thick arrowroot, is common, almost universal; especially in the morning succeeding the attack (indeed, the most transient fits of asthma, lasting only a few minutes, are generally followed by the expectoration of a pellet or two of this mucus, with whose discharge the little attack

* By an unfortunate looseness of nomenclature, the term "humid asthma" was formerly, and is even now, applied to cases of simple chronic bronchitis that have nothing specially asthmatic about them.

appears to terminate); and from such an expectoration, if it lasts only a few hours, or even days, no harm is to be inferred; it is when it never completely ceases that it becomes ominous. Wherever there is mucous exudation, there is cough; *chronic cough*, therefore, is a very bad sign in asthma, and tells just the same tale as the expectoration.

There is one prognostic sign, common to all disease, and which should not be disregarded in asthma; it is the *direction* that the disease appears to be taking. Is it becoming more or less intense? Are the attacks becoming more severe and more frequent, or milder and more distant? One often derives from this source a most valuable indication of what the upshot of the case will be. The loss and the acquisition of the asthmatic tendency is generally a gradual process, and the future of a case of asthma often but a reflection of its past history. If a patient can tell you that his attacks have mitigated in severity and are getting less frequent, you have, especially if he is young, one of the most hopeful auguries of his ultimate recovery. Such a case would probably get well of itself, without any medical interference. If, on the other hand, the disease is *gaining* on him, you have what must be considered a very bad sign, and one which, unless some speedy and great change is induced by some of those means which control asthma, will leave but very little hope.

There is yet one more circumstance that will very materially affect our prognosis; it is our ability or not to *detect the exciting cause* of the attacks, and the controlability of that exciting cause. If the exciting cause is clear, single, and such as may be prevented, nothing is simpler than the treatment of the disease, or more certain than a favorable prognosis. We hold in our hands, as it were, the key of the disease, and by shutting off the exciting cause, we may indefinitely postpone a repetition of the attacks. If the attacks never occur but as the consequence of this exciting cause, and its recurrence is permanently prevented, this preventive treatment amounts to an absolute and final cure. If, for instance, what is not uncommon, there is some particular locality where the asthma is sure to come on, and in no other, you have simply to say, "Avoid that place and you are cured." Or if, which is much commoner, there is one place and only one, where the patient never has any attacks, you may say, with almost equal certainty, "Stick to that place, and you have seen the last of your asthma." Or if, again, the asthma never comes on but as the result of some error of diet—eating something known to disagree, or eating largely and late in the day—the patient's cure is certain if he will only keep himself within strict dietetic rules, and he may safely and positively be told so. If, on the other hand, the exciting cause is not to be detected, or, being detected, not to be prevented, the omen is bad; for, in the one case, we are debarred from adopting any preventive treatment, or in any that we may try we are hitting in the dark; and, in the other, the prevention of the attacks is manifestly impossible.

If, then, an asthmatic were to present himself and seek an opinion as to his prospects, having ascertained his age, and carefully scrutinised the condition of his chest, Dr. Salter would put to him the following questions: How long do your attacks last? How often do they occur? Do you lose all traces of shortness or difficulty of breathing

between the attacks; or is the breathing always a little difficult? Do you habitually cough and spit? Does the disease appear gaining on you, or the reverse? Is the exciting cause of the attacks clear, and can you undertake that it shall not recur?

If the patient is young, the chest sound, the attacks short, the intervals long; if there is no permanent shortness of breath, no cough or expectoration; if the attacks are getting milder or rarer, and if the exciting cause is clear and such as may be obviated, then a favorable prognosis may be given.

If the patient is old, the lungs damaged, the attacks frequent and severe, the breathing never quite free, coughing and spitting constant, the disease apparently gaining ground, and the exciting cause occult or irremediable, then, *quoad* all or any of these circumstances, there is no alternative but to give an unfavorable prognosis.

ART. 41.—*On a peculiar Auscultatory Phenomenon.* By J. THORBURN, Surgeon to the Chorlton-on-Medlock Dispensary, Manchester.

(*British Med. Jour.*, June 18, 1859.)

"The best mode of describing the phenomenon in question," says Dr. Thorburn, "will be to detail one of the cases in which I first encountered it.

"This patient was a young man suffering from a digestive disorder, and with no symptom of chest-disease. I examined the thorax merely as a precautionary matter, and found percussion perfectly normal everywhere; no unusual dulness at either apex, nor in the cardiac nor sternal regions. On auscultation, the cardiac sounds were quite healthy, as was also the respiratory murmur over the greater part of the chest. Over the most of the left apex, however, and at the inner third of the right, there was audible what I took to be a loud blowing murmur with the first sound. It was distinctly of a blowing character, without much harshness, perfectly synchronous with the cardiac systole and with the pulse, and very loud. There was no *bruit* in the cervical vessels. To examine the sound more carefully, I made the patient hold his breath, when, to my surprise, I found that the murmur completely ceased. This I repeated several times, that there might be no mistake. It was perfectly plain that, though completely identified with the vascular systole, the sound was present only during the expiratory and at the end of the inspiratory process. There was nothing else abnormal present; and I treated the digestive symptoms, giving no opinion about the thoracic murmur. The patient has since continued for more than two years in apparently perfect health; and I have ascertained that the same sound is still present, but much weaker.

"In this case, then, the sound was met with in one who, in the absence of other evidence, has no thoracic disease. I met with a perfectly similar sound in a woman, who had distinct evidence of tubercles and of a large vomica on the left side. It was confined to the same regions; and post-mortem examination, while it confirmed the existence of the phthisis, showed nothing else to account for the

peculiar murmur. I have noted five or six other cases where I have met with the same thing, and in no particular were they the least alike with regard to the existence of tubercle, cardiac, or aortic disease.

"The question then is, what produces this sound, and what condition may we regard it as evidencing? It must be either a respiratory sound, modified by the heart or great vessels so as to have a cardiac rhythm, or a vascular sound modified by the respiration. From a careful examination, I have come to the conclusion that it is of the former character; and that what is heard is the expiratory murmur, and the end of the expiratory murmur itself, *saccadée* or jerked by some undue impulse. I think it probable that this impulse is communicated by a nervously excited, or perhaps *slightly* dilated aorta, just as the action of the heart may sometimes give a cardiac rhythm to a friction-sound, which is really pleural. The greater comparative weakness of expiration will account for its being heard chiefly at that time.

"There are certainly some difficulties in the way of this explanation; but I cannot arrive at a better. I cannot conceive that any sound of vascular origin so loud as this could be masked by inspiration, or lost when the breathing ceased.

"One would, however, suppose that some similar jerking or cardiac rhythm should be heard over the trachea; and in one case, though only in one, I fancied that this was the case. In this instance, the patient declared also that, after much running or the like, he could hear and feel his breath come out 'in jumps,' as he expressed it. I have myself felt the same thing after great exertion, and have ascertained that it corresponded with the pulse. It has always, however, disappeared before I could have a stethoscopic investigation. I believe that, in the cases I have cited, the condition is owing to slight over-action, from some cause, of the aorta; but I should be glad if any one could afford a better explanation. I am convinced that the sound is not very infrequent; that, though loud, it does not indicate serious organic disease; but that, by a not very skilful examiner, or by one unaware of its existence, it might easily be supposed to have such an indication."

Art. 42.—*The Hydrophone.* By Dr. S. Scott Alison, Physician to the Hospital for Diseases of the Chest at Brompton.

(*Medical Times and Gazette*, July 9, 1859.)

The hydrophone is a small water-cushion which is placed under the end of the stethoscope. A thin membrane, it appears, offers no sensible impediment in the way of water intensifying sound, although thick and non-elastic or non-vibrating bodies did, and taking advantage of this fact, Dr. Alison made a waterproof bag of india-rubber to contain water. The india-rubber membrane is so thin as to offer little or no resistance to the undulations of water. The bag is about the size of a large watch, and is sufficient to receive the extremity of an ordinary flexible stethoscope, or to form a medium of connexion between the

external ear and a solid, sounding body, such as the human chest. The thickness of the bag is not above the third of an inch. Nothing is gained by greater thickness, and the advantages of sound having to travel only a short way, and also of only a very little weight pressing upon the sounding-body, are secured. The sonorous pulses, so to speak, are readily taken up from the solid body or the chest, and are conveyed through the water, and membrane on the either side, and reach the edge of the aperture of the hearing-tube and the contained air, whether the instrument be the flexible stethoscope, the human ear, or any other hearing-tube. This instrument possesses some advantages. It fits admirably and exactly upon the part of the chest to which it is applied, however uneven and irregular, whether this be a projecting rib or a deeply sunk intercostal space, a broad level surface of a narrow depression, the clavicle or spine or the scapula. By its other side the hydrophone fits as exactly to the aperture of the hearing-tube or to the exterior of the human ear. Every part of the solid body covered by the hydrophone contributes its quota of sound. The fitting of the instrument to the hearing-tube prevents the escape of sound from the contained air to the external atmosphere, and by this means resonance of the contained air, and of the containing tube is greatly promoted, with the result of a greatly augmented sound. The edge of the hearing-tube sits so easily, and with so little resistance from the water-bag, or hydrophone, that the vibrations which are communicated to it are readily reciprocated, and find none or little of that resistance so fatal to its vibrations when pressed upon a solid body.

The hydrophone may be employed either in aid of the stethoscope or as a distinct acoustic instrument by itself. In the case of wooden stethoscopes which are solid, applied to the distal aperture, it is injurious by damping sound; in the case of the hollow wooden stethoscope it is of no material value, for water is an indifferent conductor of sound from a solid body to another solid body, and it may be stated that the hollow wooden stethoscope is more a solid than an air instrument. What it gains as an air instrument from water is lost as a solid instrument. In fact, more may be lost in one way than is gained in the other.

It is in the case of the flexible stethoscope that the hydrophone forms a material aid in auscultation by hearing-tubes. The flexible stethoscope is here meant to signify all stethoscopes into whose construction flexible tubes enter, either forming the whole tube part of the instrument, as in the ordinary flexible stethoscope, or part only, as in Camman's double stethoscope, or my own differential stethoscope. These instruments are essentially air instruments. In the case of all these instruments the intensification of sound by the hydrophone is so material, that without its employment their resources are by no means fully made available. To have the full benefit of any one of these instruments the hydrophone is essential. Respiratory sounds, healthy and morbid, which are audible with the simple flexible stethoscope, are made more audible when the hydrophone is placed under it. Rhonchi and moist crepitation are strikingly augmented. Vocal resonance, solid and cavernous, dry and moist, are in a marked

manner amplified. Pectoriloquy, accompanied with much vibration of the chest, is increased in a very striking manner. Murmurs of the heart, usually heard in a mitigated form only by flexible stethoscopes—at least in Dr. Alison's experience—are conveyed to the ear so as to produce a very distinct and defined sensation. To sum up, it appears that flexible stethoscopes, however ingeniously constructed with twisted wire and other contrivances, are, compared with the simple wooden stethoscope, essentially deficient as sound-conveying instruments, some few sounds excepted; but that the hydrophone greatly counteracts this deficiency and brings them up much more to the rank of Laennec's stethoscope. But the inquiry may be made—What good purpose can the hydrophone subserve under such circumstances, if it can only bring a second-rate instrument nearly up to the position of another? The answer is this—There are situations and occasions which require the flexible instruments, as is well known, and it is certainly important to render them, defective though they are, as useful acoustic instruments as is possible.

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 43.—*Cursory remarks on the diagnosis of Fatty Heart.* By Dr. HENRY KENNEDY, Physician Extraordinary to Sir P. Dun's Hospital, Dublin.

(*Edinburgh Medical Journal*, July, 1859.)

The following remarks are calculated to assist our diagnosis not a little:

"There is," says Dr. Kennedy, "a physical sign, however, which, though not always present, may give us valuable assistance. Nor do I find that any writer has noticed it in connexion with the diagnosis. I speak of enlargement of the heart where there is also fatty degeneration, and this without valvular disease. In Quain's valuable tables, which I take as independent observations, and so going to confirm my own, out of eighty-three more than half presented this state. Hence I cannot but conclude that enlarged heart forms an important element in what may be called the natural history of the affection; and I do not find that, in this point of view, it has been noticed by any recent writer. Fatty change is, in truth, by far the most frequent cause of enlargement of the organ, where there exists at the same time no valvular disease. For every one must be aware that hypertrophy *per se*—the heart's texture remaining sound—is very rarely met with. Hence, if we have an enlarged heart and healthy valves, the strong presumption is that the organ is fatty. But even with a previous knowledge of this fact, I am ready to admit that enlargement, even to double the average size, is not by any means so easily made out as might *à priori* be supposed. In the great majority of the cases there is more fat than natural under the skin; and nothing is more common than to find it in quantity in the anterior mediastinum, to say nothing of the varieties to be met naturally as regards the relative position of the lung and heart. Still, the difficulties may, I know, be often overcome by an

accurate examination; and I would specially mention the plan of using percussion in varied positions of the body. But some one may ask here, Is not this enlargement of the organ just as likely to be overlooked as any other physical sign connected with the disease? My answer is in the negative; and for this reason, that the pulse at the wrist leads us to look for it. You are all aware that on this last sign much has been written as diagnostic of fatty heart. I must here state my conviction that it has been the exceptional cases which have been commonly described as marking the disease; such as slow, unequal, intermitting, or very rapid pulse. Now, I do not deny that these occur in cases of fatty heart. I have met examples of all of them. But what I do say is this, that the pulse most usually met with is natural as to frequency, at the same time that it is fuller, passing sedately, as it were, under the finger, and giving the idea of being diffluent. It is, in truth—contrary to what is usually taught—the pulse of hypertrophy, but not attended with the same strength; and Hunter's expression might almost be applied to it, as being 'action without power.' Now, you will observe that such a pulse is exactly in keeping with the state of the heart which has been just described; it is what we would expect; and whatever doubts may arise about the most common character of pulse, there can be none, it may be stated, as to the frequency with which enlargement of the heart occurs in fatty degeneration, being fully one half the cases detailed. I stop not to inquire the precise cause of the hypertrophy, but only to state the fact, and my own experience about it."*

We would also direct attention to a remark about dyspnœa as a symptom.

"Now, it is not the symptom itself to which I would direct attention, but the disproportion which almost constantly exists between the complaint of the patient and the labour of the respiration as evidenced to our eyes. In the history of the complaint, I am really not aware of any other single symptom more striking than this. The patients tell you that their great suffering is from dyspnœa, that they cannot make the slightest exertion; and yet, when you look at them, you see little or no corresponding movement of the chest. The contrast between this state and where there exists valvular disease, as, for instance, of the left auriculo-ventricular opening, is truly striking. Nor does this state exist only where there is fatty heart. It will be observed where the patient, in addition, gets an attack of bronchitis, very slight to all appearance, and yet a most fatal affection; and I have reasons for knowing that grave errors in prognosis have arisen in these cases, as, I believe, from the very cause to which I allude; that is, the respiration looks so quiet as to throw the medical man off his guard. It was gradually that I arrived at what appear to be fair reasons for this state of things. In the first place, the cartilages of the ribs are very generally more or less ossified; in the second, the inter-

* It has yet to be determined whether slow pulse occurs in any particular form of fatty heart. That it is by far the exceptional case I have no doubt; and were I to venture to connect it with any one state of the organ, it would be that in which, without any enlargement, there existed true degeneration of the heart's texture; the patients being anything but fat. In most of such cases the effects of wine are truly remarkable.

costal muscles are very apt to be either covered with fat or degenerated; and, in the last place, the heart itself, whilst seriously altered in its texture, does not present any impediments, in the shape of valvular disease, to the current of the blood; and thus it is, with a disease of slow progress, as we must suppose fatty degeneration to be, that the system gets gradually accustomed to the change, and to a degree which it is impossible for it to do when there exists a direct obstacle to the circulation. It has further appeared to me that this want of proportion—as it may be well called—between the patient's sufferings and the physical exertion to relieve them, is particularly to be observed when the right heart is the furthest advanced in disease; and bearing out this, I have seen cases where the pulse at the wrist was steady and equal, not beating more than 86 in the minute, and this going on to the very last moment of existence. At any rate, whatever the explanation be, the fact itself has repeatedly come under my notice, and it appears to me one well worthy of attention."

ART. 44.—*Retroversion of the Aortic Valves from disease in the sinuses of Valsalva.* By Dr. GULL, Physician to Guy's Hospital, &c.

(*Guy's Hospital Reports*, 3d series, vol. v, 1859.)

Physiologists have explained the action of the sinuses of Valsalva for adapting the aortic valves to prevent regurgitation during the diastole of the ventricle. They have shown that during the ventricular systole, the sinuses, on account of their thinness, are much dilated, and thus the valves made tense; that as the ventricular systole ends, the recoil of the sinuses adjusts the valves for the support of the arterial column. How perfectly this mechanism fulfils its function is proved by the clearness of the second sound of the heart during life, and by the thinness and definition of the surfaces of contact after death. The simplicity and the perfection are wonderful.

The object of these remarks is to draw attention to an accident to which there is a liability when the sinuses become rigid from atheromatous changes. Under such circumstances the sinuses may fail to throw the valves inwards towards the centre of the vessel, and these, so deprived of that mutual support which they have when the recoil is normal, may be exposed to the danger of retroversion. Dr. Hodgkin, and subsequently Dr. Chevers, referred to many of the conditions which produce retroversion of the aortic valves, but neither has noticed the direct influence of the want of elasticity in the sinuses here alluded to. The following case, admitted into Guy's Hospital, under the care of the late Dr. Hughes, affords a good illustration of such an accident.

CASE.—*Sudden dyspnœa and palpitation; orthopnœa; dropsy; death after fifteen weeks. Atheroma of the sinuses of Valsalva; retroversion of one of the aortic valves; great dilation of left ventricle.*—John H—, æt. 39, a day labourer in the docks. Always had good health until ten weeks before admission into Guy's Hospital. His symptoms—breathlessless, orthopnœa, palpitation, and cough—came on suddenly. He never had rheumatism. The

distress of breathing continued, and was attended with so much pain across the chest, that an aneurism of the aorta was suspected. The pain was, however, probably attributable to sudden and continued distension of the left ventricle. The stethoscopic symptoms were only those of aortic regurgitation. He remained unrelieved, and died after being five weeks in the hospital.

Post-mortem examination by Dr. Wilks.—Masses of apoplectic effusion in both lungs, but principally in the right. Great dilatation of the left ventricle, with only moderate hypertrophy, the form of the ventricle being remarkably globular from transverse distension. The bulging of the posterior wall of the ventricle behind the mitral curtain was also very remarkable. The muscular columns supporting the chordæ tendinæ of the mitral were much elongated, but not hypertrophied. The sinuses of Valsalva were extremely atheromatous. This was especially the case with two of the sinuses. The aortic valve corresponding to one of these was retroverted. Except this apparently accidental folding over of the valve, the valves were healthy. The aorta above the sinuses was free from atheroma, and healthy. Kidneys and other abdominal viscera healthy.

Art. 45.—*On the sudden increase of White Blood-corpuscles during the last stage of Cachectic Diseases.* By Dr. Gubler.

(*L'Union Médicale,* July 2, 1859; and *Med.-Chir. Rev.,* Oct. 1859.)

The author relates two cases in which, after the proportion of white and red corpuscles had been observed during a cathectic malady to remain normal for a long time, the number of the former suddenly increased to such an extent as to constitute well-marked leucocythæmia.

Case 1.—A man, æt. 21, of scrofulous habit, who six months before admission to the Hôpital Beaujon, under Dr. Gubler, was attacked, in July, 1858, with intermittent fever, which would not yield to quina. He was then treated with *karapa,* a substance that has been proposed as a substitute for quina. The spleen being enlarged, the blood was examined microscopically on the 17th and 20th of March, 1859, when there was no increase of white corpuscles, about a dozen being counted in the field; on the 24th, pneumonia of the right lung supervened, and there was now an increase of from thirty to forty in the field; on the 25th, from fifty to sixty were counted. Death ensued from pneumonia on March 27th. The post-mortem confirmed the diagnosis of pneumonia and hypertrophy of the spleen.

Case 2.—A young man, æt. 18, admitted into the hospital with Bright's disease, April 9th, 1859. He remained for a week, and the blood examined at this time was normal as regards the proportion of white and red corpuscles. He returned in a state of general anasarca a week later, and when the blood was examined on May 13th, the red corpuscles were found to be ill-formed, not forming the ordinary rouleaux; and of the white from fifty to fifty-five were counted in the field, instead of the twelve or fifteen previously seen. The latter had undergone a still further increase on May 13th, and there was then noticed a number of amorphous masses of a white colour and irregular shape, apparently consisting of coagulated fibrin. Death ensued on May 14th. The post-mortem showed the kidneys to be granular and contracted, the liver and heart enlarged, and the spleen atrophied and flabby.

Art. 46.—*Rupture of the Superior Vena Cava within the Pericardium.* By Dr. John Shortt, Zillah Surgeon.

(*Indian Annals of Medical Science*, Jan., 1859.)

Case.—Chinia, æt. 50, native Christian, butler, of healthy, robust appearance, but said to be of intemperate habits, came to me yesterday at 3 p.m. with a chit from his master for advice.

Complains of fever and cold, with a pain in his chest, the latter extends over the whole of the anterior portion of the chest, and is more of an oppressive, deep-seated, aching nature, so that he cannot stoop. So much so, that the attempt to put down or remove a plate from the table aggravates it; states that he has suffered from the above symptoms for the last two days, which he attributes to having taken a cold.

Pulse soft and full, tongue white, skin cool, bowels tolerably regular. I gave him a prescription for a couple of pills and aperient draught, and directed him to apply a mustard sinapism to his chest as soon as he got home.

It would appear that the patient went with the prescription to the hospital, got his medicines, went to the bazar for some purpose of his own, and returned to his master's at about 5·45 p.m., where I happened to be at the time. On his return home he sat down and rested himself for about twenty minutes, and then got up and went a few yards to get some water from his wife; at this moment he fell forward on his face and cut the skin of his nose skin deep. The wound bled freely, but he was taken up insensible. I was immediately asked to see him. I found him pulseless, skin cold and perspiring, pupils somewhat contracted and inactive to the stimulus of a lighted candle; breathing stertorous, with a peculiar whiff at the corners of his mouth. He continued in this state for about fifteen minutes, and expired.

Autopsy, fourteen hours after death.—Body well nourished and plump, free from marks, except the wound on his nose; on cutting through integuments, the parietes of chest and abdomen were covered with two inches of subcutaneous fat; on opening the chest the lungs were found gorged with blood, and of a dark colour, filling the entire cavity. Pericardium distended; on opening the sac it was filled with dark clotted blood and a circular rent about the size of a shilling in the superior vena cava within the sac, and near its termination into the upper part of the right auricle; half an inch of the cava round the rent had its serous coat destroyed, and the surrounding tissues were infiltrated with blood. Heart empty, large, covered with fat of soft texture, and flabby. The valves were healthy, except the aortic, which was slightly thickened. Abdomen, liver, spleen, and kidneys were greatly enlarged and gorged with blood. All the other parts were found to be healthy.

Remarks.—This is an interesting case, as rupture of the superior vena within the pericardium is not of common occurrence. In fact, I do not remember meeting with an instance on record. Subsequent to seeing me, the patient walked about four miles ere he got back to his master's house, so that the fatigue may have hurried the fatal termination. Some might suppose that the fall produced the rupture; I think not, from the deep-seated nature of the pain complained of, and the appearances presented at the seat of disease. The rent was circular, and the serous coat around for about half an inch destroyed, and the infiltrated appearance of the tissues indicates that that was the seat of an ulcer; and from the congested appearance of the larger glands it would appear that the larger veins were loaded with blood. This, together with the fatigue, may have caused the rupture at this part, from its being previously diseased.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 47.—*Quinine in acute Peritonitis.* By Dr. BEAU, Physician to the Hôpital Cochin, in Paris.

(*Medical Times and Gazette*, July 2 and Sept. 3, 1858.)

The following interesting remarks are from the pen of the foreign correspondent of the 'Medical Times and Gazette:'

"The experiments made of late years by Legroux, Monneret, Andral, Trousseau, and other celebrities connected with the French school, have proved, beyond a doubt, the beneficial influence of quinine in large doses in the treatment of acute rheumatism, and other diseases of a similar type. Recently this same medicine has been vaunted in combating certain forms of peritoneal inflammation occurring in connexion with the puerperal state, and more especially by M. Beau, who, during his official connexion with the Cochin Hospital, employed it in an immense number of cases where that formidable disease prevailed in an epidemic form. So marked was the success which attended his experiments, that he ultimately arrived at the conclusion, that quinine, in large and continued doses, if not a specific in that disease, is at least the most valuable, and at the same time the most powerful curative agent we possess in its management and treatment. Entertaining such views in reference to the value of quinine in puerperal peritonitis, it was exceedingly natural that he should try the same remedy in a similar affection occurring apart from the puerperal state; and hence we find, that in the idiopathic form of peritonitis he has recourse to the same mode of treatment, and urges on his pupils its decided superiority over every other with which he is acquainted. In a disease of this kind, which, in spite of the most active and energetic measures we may adopt, most generally pursues its fatal course with amazing rapidity, we are always disposed to accord a favorable reception to any theory, however novel and unsupported by facts it may be, provided only we be told that its practical application has been followed by merely partial success; and we are always most agreeably surprised when, with preconcerted notions unfavorable to the theory, we find ourselves confronted with a single fact which, though it may not completely establish the new doctrine, at least enlists our sympathies in its favour. Such was the surprise which we experienced in reference to the quinine treatment recommended by M. Beau, when we witnessed, for the first time a fortnight ago, a genuine case of idiopathic peritonitis treated and cured by this medicine, to the entire exclusion of every other therapeutical measure. To those who have been taught in early life that inflammation of the peritoneal membrane demands, in the majority of instances, the abstraction of blood—if not generally, at least locally—until a powerful impression be made on the system, and that this heroic plan of treatment must be followed by the assiduous exhibition of calomel until the patient be brought under the influence of this powerful and dangerous mineral, the solemn declaration of a man of high authority and great experience, to the effect that such treatment is not only useless but positively

pernicious, cannot be viewed with any other feeling than that of amazement; and yet, reluctant though they be to abandon a system which has been inculcated in their youth, and which they have been accustomed to regard as strictly orthodox, they must resign themselves to seeing it demolished by another diametrically its opposite.

"As a sequel to the foregoing remarks, we cannot do better than place before your readers the following case, the details of which we extract from our medical notes, taken at the bed-side of the patient. A girl, twenty-four years of age, was admitted into the service of M. Beau, at the Hôpital la Charité, and on examination the following symptoms were recognised. Over the lower parts of the abdomen there were great pain and tenderness, which were increased on the slightest pressure; the pulse was small, hard, and quick, averaging about 120 beats in the minute; the skin was hot, dry, and harsh; tongue furred; constant nausea, with occasional vomiting; constipation; the features were pinched, and the countenance indicated much anxiety; respiration hurried; complexion muddy, and the conjunctiva slightly yellow. The patient lay on her back, with the legs flexed on the thighs. Her previous history showed that for some weeks prior to the invasion of the disease she had been in an indifferent state of health, which she attributed to an unusual amount of bodily fatigue to which she had been subjected. In the presence of these symptoms, M. Beau at once pronounced the case to be one of acute peritonitis. Treatment: an emetic, composed of ipecac. and tart. antimon. was ordered, to be followed up by a purgative enema. The feeling of nausea having thus been removed, and the stomach prepared for the administration of the sulphate of quinine, this medicine was prescribed as follows: two grammes (equal to thirty grains) were ordered to be divided into three doses, one of which was to be given every eighth hour, and a blister was applied to the lower part of the abdomen, over the spot where the pain and tenderness were greatest. After four or five doses of the quinine, its physiological effects, such as deafness, ringing in the ears, &c., began to manifest themselves, and consentaneous with these there was a manifest diminution of the original symptoms. The pulse from 120 was reduced to 110; the pain and tenderness of the abdomen were considerably subdued; the febrile symptoms, generally, were greatly modified, and the countenance became more placid. The quinine was ordered to be continued, together with the use of refreshing drinks, and on the fourth day of the treatment the pulse fell to 100, accompanied by corresponding improvement in all other respects.

"In a week or ten days from the commencement of the treatment, the full effects of the quinine having been produced, that is to say, the original disease having been, as it were, overcome, the medicine was gradually diminished, and ultimately discontinued. The pulse has fallen regularly, and the patient is now convalescent. Now, in a case like the above, implying the undoubted existence of inflammatory action of a most important membrane, the indication, according to the notions generally entertained, would be abstraction of blood, if not from the arm, at least by the application of leeches over the seat of the disease; and we venture to say, that in a similar case such would

be the practice adopted by a large proportion of medical men. But according to the theory of M. Beau, instead of curing the disease, the abstraction of a single drop of blood would only increase the evil, and ultimately lead to a fatal result. In peritonitis, and in the phlegmasiæ generally, the blood, according to Beau, is poor in red globules, and consequently rich in fibrine; in other words, the increase of the latter is in a direct ratio to the diminution of the former. It is not difficult, therefore, to understand his determined opposition to depletion, and other measures calculated to lower the vitality of the blood. He regards the excess of fibrine as the real pathological condition on which this disease depends; that is to say, he regards the fibrine as the phlogistic principle, and whatever tends to augment the fibrinous portion of the blood must of necessity increase the fever and feed the disease. Consonant with these views he considers anæmia, which is always characterised by diminution of the red globules of the blood, as one of the principal predisposing causes of the phlegmasiæ; and when this condition of body exists, exposure to cold and wet, to sudden change of temperature, or to any of the other exciting causes of inflammation, may be followed by an attack of acute peritonitis. Quinine being the sheet-anchor of M. Beau, as we have shown, in the treatment of this disease, it will not be out of place here to indicate some of the leading rules which he lays down in reference to the manner in which it should be employed, and on the rigid observance of which the success will depend. It is necessary that a decided effect be produced on the system at once, and hence the earlier the quinine is exhibited after the malady has declared itself the better. But in every case he deems it advisable to premise the first dose of quinine with an emetic; to be followed up by a purgative enema. As soon as the stomach is prepared to retain the quinine, he gives the latter to the extent of eight grains every eighth hour, and this quantity of the salt must be continued for several days in succession. It is right, however, to observe that the dose must be proportioned to the sensibility of the patient; that is to say, it must be increased should the intoxication produced by it prove too feeble, and diminished in the event of its being too strong. M. Beau has never, in the course of his experience, had occasion to prescribe a larger dose than four grammes (60 grains) of the salt in twenty-four hours. Even when the inflammation of the peritoneum is limited to one spot, and when the malady has been to a certain extent overcome, it becomes imperative towards the second or third day to increase the dose of the salt to a small extent, as the system becoming accustomed to it, the quinine in its original dose would not suffice to maintain the mastery over the disease. For the same reason the medicine must not be diminished too rapidly, nor discontinued too early. Beau states that he has seen cases in which, up to the eighteenth day of the disease, he could not suspend the medicine without such suspension being followed by a recurrence of the febrile symptoms. Should the stomach from excessive irritability reject the quinine (by no means an uncommon occurrence), it should again be administered in some other form, so that if one form does not suit another may. When, notwithstanding the form in which it is administered, the stomach obstinately refuses

it, the quinine may be given in the form of enema, as experience has proved that its absorption readily takes place when given in this manner."

In another letter, in answer to some strictures by Dr. Handfield Jones, the same able correspondent continues:

"While watching the progress of the case in which these remarks have originated, I was as incredulous of the efficacy of the quinine treatment as any one possibly could be, and it was only on remarking the rapid and decided impression made on the disease during the exhibition of the drug, and the ultimate recovery of the patient, that I was constrained to inquire whether the recovery was not a mere fortuitous occurrence, and independent altogether of the medication employed. My first inquiry was addressed to M. Beau's intelligent chef de clinique, and by him I was assured that a similar result, under the same circumstances, was not of uncommon occurrence; and that the powerful curative effects of large doses of quinine in peritonitis, as well as in inflammation of serous membranes generally, are by him too frequently observed to admit of any doubt on the point. This statement was besides amply corroborated by M. Beau himself in his lecture, a few days afterwards, in which he stated that he had tried all the different systems of treatment vaunted in the management of peritonitis, and that he had found none so effectual as the exhibition of quinine in large and continued doses, regulated according to the tolerance of the patient and the violence of the malady. For several years past he has employed no other, either in cases connected with the puerperal condition, or apart from that state. With him it is no expectant treatment, but one in which he recognises a powerful instrument for good, and in no case has he seen any ill effects follow it. It may be true, as Dr. Jones remarks, that all 'nerve toners are tissue irritants,' and that quinine given in what he styles the sthenic form of peritoneal inflammation might, from its property as a general tonic, prove injurious. This can only hold good, however, when the quinine is given in small doses. If it be given in doses of from one to two grains, or thereabouts, at moderately distant intervals, it produces a tonic influence, imparting vigour to the system generally; but the experience of late years has proved beyond a doubt, that in doses of eight or ten grains administered every eight hours, it produces a very powerful sedative influence on the entire nervous system, and especially on that portion of the ganglionic system which presides over the functions of the circulation and the production of caloric. In this respect, according to M. Briquet, who has experimented largely with the sulphate of quinine, it should be classified with opium and digitalis, both of which it resembles in its stupifying and sedative action.

"If this view of the physiological action of the sulphate of quinine in large doses be correct, then this medicine must prove, if not useful, at least not injurious, in the treatment of the sthenic form of peritonitis to which, if I have understood him aright, Dr. Jones considers it inapplicable. The object which in all cases of general inflammation should be steadily kept in view, is its subjugation by such means as are least likely to be followed by reaction. Now, we all know that when bleeding has been had recourse to, reaction almost invariably

takes place, and the re-establishment of the inflammatory process, which for a moment may have been interrupted, reappears often in an aggravated form. If bleeding be an evil even in the sthenic form of inflammation, a doctrine which is held by not a few in the profession at the present day, how much more is the practice to be deprecated in those forms known as asthenic?—and it is especially as regards this latter type that the treatment pursued by M. Beau is deserving of attentive consideration. His theory is, that in the great majority of cases of peritonitis, there is found, prior to the outbreak of the disease, an impoverished condition of the blood, manifested in the diminution of its red globules, and in a proportionate increase of its fibrinous element; and that where such a condition of blood exists, there is a manifest tendency or predisposition to peritonitis, or to any of the other phlegmasiæ. A moderately strong exciting cause, such as exposure to cold, or undue fatigue, is under these circumstances calculated to call it into activity. The anæmic condition is, so to speak, according to this practitioner, the almost invariable *cachet* of the phlegmasiæ. By way of more thoroughly understanding M. Beau, and for the purpose of testing the sincerity of his views, I, in the course of conversation with him, asked him whether he believed in the existence of the purely sthenic form of peritonitis. He replied, 'If such a form exist, it must be very rare, for I have seldom if ever met with it.' 'But,' I rejoined, 'we can imagine peritonitis occurring in the case of an individual strong, vigorous, and healthy; in other words, in a man whose blood is in a perfectly normal condition and abundant in quantity, as the consequence of a bayonet wound penetrating the peritoneal covering; would you not in such an instance expect to find the inflammation assuming the sthenic form?' 'In such a case,' he replied, 'I would hardly expect peritonitis at all, inasmuch as the person receiving such an injury would be in the very best possible condition to resist the inflammatory process; at all events he would not be so liable to it as an individual previously debilitated, and in whose case there is an excess of fibrine as compared with the normal quantity of this material in healthy blood. Let but such an accident happen to the latter, and peritonitis is almost sure to follow.' It would thus appear that, so far, M. Beau and Dr. Handfield Jones agree, inasmuch as the latter, while attending to the conditions or grades of inflammation, admits that the sthenic form is rare, and that the asthenic, together with a form intermediate between the two, are by far the most common. I have thus given as complete an *exposé* of M. Beau's views as the limits of a letter will admit of. With such views, it is hardly necessary to add that he considers venesection altogether out of the question in the treatment of peritonitis.

"The disease being one of debility, such a practice can but tend to increase it, and would really be tantamount to pouring oil on a fire for the purpose of putting it out. His sheet-anchor is the sulphate of quinine, with which the system of the patient must be invaded as near the commencement of the disease as possible. To effect this, from twenty to thirty grains of the drug must be administered in the twenty-four hours, taking care always to proportion it to the sensibility of the patient and the gravity of the symptoms. The state of 'quinism'

or quinic intoxication, generally follows the second or third dose, and consentaneous with this the heart's action becomes lowered, the heat and other febrile symptoms disappear, and the local pain ceases. M. Beau considers it essential that the patient be apprised of the very peculiar effects which the medicine is likely to produce, in order that he may not be alarmed in mistaking these for an aggravation of the original disease; the deafness and ringing in the ears being in some cases so great, that in the absence of this precaution, a bad moral effect might be the consequence. It sometimes happens that the local symptoms continue after the fever has disappeared, and the case then becomes one of a chronic kind. When this takes place, the treatment of M. Beau is exceedingly simple, consisting in the application to the abdomen of a series of blisters; the quinine, he believes, exercises no influence whatever over the local morbid products. During the stage of convalescence he endeavours to correct the anæmic condition of the patient, not by the administration of iron, but by supplying the system with nutritious food. In closing my remarks on this subject, I may mention that M. Beau treats all cases of acute rheumatism which come under his care on the same principle, and by the same medications."

Art. 48.—*On the treatment of Dysentery.*
By Mr. Ford, Surgeon to the Police Force at Melbourne.

(*Australian Medical Journal*, No. 15, July, 1859.)

"When first I came to this country (now more than ten years ago) and for a year or so afterwards, I was," says Mr. Ford, "sadly perplexed as to the proper mode of treating dysentery. I had scarcely even seen it at home, although I had had considerable practice in the cotton-mill districts of Nottinghamshire, amongst the poor Irish gardeners of Fulham, and also in the iron-works of South Wales; and I found the same perplexity existed in those medical gentlemen's minds whom I consulted. It occurred to me that, as the disease was the result of excessive action of one (a small) portion of the intestines (the transverse, descending colon, and rectum), and probably total cessation of the peristaltic action of the rest, it would be advisable, if possible, to restore the unity of action throughout, and also to get rid of any irritating matter that might have caused the disease. To effect this purpose, I give ʒj magnes. sulph. and 20 m. dilut. sulph. acid, every four hours; and at night, if the tenesmus is severe, I give, of blue pill, 4 gr., opium, 1 gr. I only allow a strictly farinaceous diet—no stimulants of any kind; the recumbent posture, with (in severe cases) the thighs elevated with a pillow, to relax the abdominal muscles, and a mustard poultice every twelve hours all over the abdomen. I invariably find that in the course of twenty-four to thirty-six hours, the dejections become feculent, the blood ceases, and the tenesmus subsides. The frequency of the motions cease when the irritating cause of the disease has passed, and although the salts are continued, the bowels do not act sometimes for twenty-four hours. I will illustrate this treatment by the following cases, both of medical men. The first occurred about six years ago. I was sent for to see

a young man, a surgeon, who had just arrived in the colony, and was suffering from the then prevailing disease—dysentery. I found him much reduced, passing blood and mucus, suffering great pain, and worn out with the incessant tenesmus; he was dosing himself with chalk mixture, laudanum, &c. I asked him if he intended implicitly to obey my instructions, and make no inquiries? He promised. I put him upon the above treatment, and in about eight or ten days he was well enough to leave the house. The next case I shall quote, I treated last September. On the occasion of our last medical dinner, I was sent for to see a Dr. C—, from Maryborough. I left immediately after the removal of the cloth, and found this gentleman in bed at an hotel, in (I may say) a most abject state of misery. He told me that he had had dysentery for ten months, on and off; that he had tried everything the pharmacopœia could furnish, and that the only thing now that he could obtain any relief from was opium, in some shape or other. He was then partly under its influence. I made the same stipulation with him as in the previous case, put him upon the same treatment precisely, and in a fortnight he was, I may say, quite well. He returned to his practice (an extensive one) in about three weeks from the commencement of my attendance, and has, I believe, been in perfect health since. I recommended this gentleman to take the nitro-hydrochloric acid for some time. I quote these because, being gentlemen of our own profession, they will probably carry more weight with them; but I append a list of cases of pure dysentery treated by me in my capacity of Surgeon to the Police Force. You will perceive that they extend over a period of seven years, and it affords me the greatest satisfaction in stating, that during the whole of that period I have not lost one adult case of dysentery; and I feel convinced, that if the treatment is carried out with boldness and confidence, the same will nearly always be the result. There is nothing magical in the effects of the treatment; on the contrary, it requires patience and a certain amount of endurance on the part of the patient. I may state, that the average duration of each case I found to be nine days.

"I have not had time to extend this paper further, or I should gladly have entered upon other matters; but I may state, that I pursue a somewhat similar treatment with infants, a more detailed account of which I shall at some future occasion be happy to furnish."

Art. 49.—*On the treatment of certain abdominal inflammations by copious injections of warm water.* By Dr. Eisenmann.

(*Bull. de Thérap.*, t. lv, p. 542; and *Gaz. Hebd.*, May 27, 1859.)

Dr. Eisenmann's plan is to inject about three or four quarts of water at blood heat. The first injection, he tells us, returns in a short time, and brings with it a considerable quantity of fæcal matter. The second injection, which is to be given immediately after the return of the first, is almost invariably retained without difficulty.

Dr. Eisenmann believes that by this plan he has cut short, often in

a very few hours, a dozen attacks of peri-hepatitis, to which he himself is very liable; and he mentions cases of nephritis, peritonitis, abdominal typhus, violent palpitation, &c., in which he has seen a similarly rapid change for the better in others. He believes also that these injections will prove of great value in the treatment of cholera. Dr. Eisenmann does not appear to be aware of the satisfactory results obtained by Mr. Hare from copious injections of warm water in the treatment of dysentery in India. ('Abstract,' XX, p. 253.)

Art. 50.—*On the character of green and melænal discharges from the bowels.* By Dr. S. G. Armor.

(*North American Med.-Chir. Rev.*, Sept., 1859.)

In this paper Dr. Armor collects a good deal of evidence which serves to show that green discharges from the bowels do not indicate, as was once supposed, increased or perverted hepatic secretion. He shows that the characteristic colour of the stools depends upon the presence of the colouring matter of the bile, and not upon the bile proper—the bile proper being absorbed on its way from the liver to the rectum; and that the particular putridity or sourness of the green discharges of childhood are just what are to be expected from the absence of bile in the intestine—for when no bile flows into the intestine, and an animal is fed on *flesh*, rapid decomposition and abundant generation of fetid gases is the result; but, when in the same case, the animal is fed on bread or starchy substances, the fæces and abdominal gases are sour rather than putrid. In ordinary cases Dr. Armor looks upon an hyperæmic state of the mucous membrane as an essential fact in the formation of green discharges from the bowels, and upon altered blood, mixed with mucus and other secretions, as the colouring matter. In the green stools from taking mercury or from drinking the Carlsbad waters, the principal cause is allowed to be the presence of sulphuret of iron or of sulphide of mercury, respectively.

Art. 51.—*Intestinal infusory animalcules in man.* By Dr. Malmsten, of Stockholm.

(*Archiv f. Pathol. Anat.*, t. xii, 1858; and *Gaz. Hebd. de Méd. et Chir.*, June 12, 1859.)

M. Davanie has already called attention to the existence of these animalcules in the stools of certain persons suffering from cholera, typhoid fever, and ordinary diarrhœa. These animalcules were of the genus *Cercomonas*, and, like those described by Dr. Malmsten, they died very shortly after being expelled from the intestine, a fact which M. Davanie is disposed to refer to the cooling of the voided matter. These animalcules would appear to differ altogether from the animalcules which are developed in decomposing animal matters, for if they were not, they would not die upon being expelled from the bowels.

Dr. Malmsten's cases are two in number:

Case 1.—A sailor, æt. 38, suffering from diarrhœa, admitted into the Seraphim Hospital, 22d March, 1856. Two years previously he had suffered

from cholera, and in the interval he had many bouts of indigestion and of diarrhœa alternately, with constipation. When admitted, any meal was almost immediately followed by a copious stool, mixed with much indigested food. He suffered also, from frequent tenesmus, with discharges of sanguinolent mucus. All the while his appetite was very good, and it was only by frequent and copious eating that he could quieten the feeling of emptiness caused by the frequent motions. There was no fever, and no tenderness of the abdomen in any part. Within the rectum there was found immediately within the anus an ulcer, secreting puriform sanies, with solid bases and elevated edges, and, on examining this sanies with the microscope, it was found to abound with animalculæ of the genus Paramœcia—Dr. Malmsten calls them *Paramœcium coli.* Similar animalcules were also found in incalculable numbers in the motions immediately after their evacuation, and also in the mucus which was brought away on a speculum from high up the gut. The patient remained in hospital until August 28, and, under the treatment adopted (principally injections of weak hydrochloric acid) the disposition to diarrhœa passed off, and the number of animalculæ in the motions diminished. Six months later, also, the improvement continued, and the numbers of the animalculæ were still further diminished.

Case 2.—A woman, æt. 35, suffering from the same state of intestinal disturbance as in the last case, with this addition—that the stools contained very considerable quantities of blood, and that the abdomen was very tender in the course of the descending colon. Animalcules in myriads were present in the stools. Death happened eventually from marasmus. On post-mortem examination numerous gangrenous ulcers were found in the large intestine, and many animalcules were found in the purulent matter belonging to these ulcers, but the animalcules were found in greatest number upon those parts of the intestine where the mucous membrane and mucous secretion were healthy, and especially in the cæcum and its appendix, which were perfectly healthy. No such animalcule was to be met with above the ileo-cæcal valve.

Art. 52.—*The treatment of obstinate Constipation by Electricity.* By Dr. Clemens.

(*Deutsche Klinik,* No. 43 and 45, 1858.)

Dr. Clemens informs us that he has cured radically several cases of obstinate constipation by applying the poles of an inductive apparatus to different parts of the abdomen. In some instances, the shocks were passed across the abdomen from side to side; in others, along the course of the colon; in others, again, from the umbilicus through to the lumbar region of the spinal cord. This plan of treatment, which requires to be pursued for several months, appears (so thinks Dr. Clemens) to be far preferable to the frequent use of purgatives. The cases referred to are of course cases where the constipation did not depend upon any organic obstruction: at the same time, reference is made to a case of permanent contraction of the bowel, in which great relief was obtained from the careful use of this mode of treatment.

Art. 53.—*Chronic Ulcer of the stomach, with Gangrene of the spleen and lung.* By Dr. Lees, Physician to the Meath Hospital, Dublin.

(*Dublin Hospital Gazette*, May 1, 1859.)

Case.—A woman, about 50 years of age, was admitted into the Meath Hospital, on the 1st of February, suffering under severe pain, which she referred to the region of the epigastrium. She was of evidently delicate habit, appeared much worn and emaciated, and stated that she had been married to a soldier in a marching regiment, had accompanied him on service to England, and afterwards to the West Indies, where she had resided for a long period, enjoyed good health, and had borne nine children. She was first attacked about three years ago with the primary symptoms of stomach derangement, when she experienced slight attacks of nausea and sickness after meals, and used to have vomiting of clear fluid. In some time after, the attacks of sickness became more severe, and she now began to vomit her food; this continued for three years, her sufferings going on increasing, though she applied for dispensary relief, and tried several remedies. About twelve months ago she entered Saint Vincent's Hospital, under the care of Dr. O'Doherty, who kindly furnished some notes of the case. When she came under his care she complained of intense pain in the pyloric region, and had frequent and severe vomiting after food. The pain was not increased on pressure; neither could any trace of pyloric tumour be detected by the most careful examination. Dr. O'Doherty's diagnosis at that time was, that the woman had either malignant disease of the stomach, or simple ulceration of that viscus. After some time in Saint Vincent's Hospital, she obtained comparative relief from the treatment adopted, and went out. However, the symptoms returned again with renewed acerbity, acute pain in the stomach, especially after swallowing food, vomiting, &c.; and thus she continued until about a week previous to her admission into the Meath Hospital, when (she said) she felt something giving way in her inside; this, and the acute pain in the epigastrium, induced her to come into hospital. When I first saw her, she had no vomiting, but there was great pain and tenderness in the epigastrium; the recti muscles were tense and hard; no trace of tumour was perceptible, and she had no diarrhœa; but the pulse was 120, and never came down throughout the whole progress of the case. Leeches were applied to the epigastrium, and calomel and opium, in small doses, were given internally. This treatment gave relief from pain; and nutritious diet, with wine, was now given to her; but on the 11th inst. she first began to complain of cough, and on examination the base of the left lung was found dull on percussion; loud bronchial respiration was plainly audible, but not the least crepitus could be detected, though examined for repeatedly and carefully.

On the 14th of the month another formidable symptom supervened: the patient's breath began to exhale the peculiar nauseating and intolerable odour characterising gangrene of the lung. Her pulse continued at 120; and at length she died on Thursday, 3d of March, never having vomited blood, or any dark substance, at any period of her illness.

Post-mortem.—On opening the abdominal cavity, the first appearance remarkable was vascularity of the omentum. On raising the liver, its posterior surface was found adherent to the anterior surface of the stomach. The adhesion was so firm, that in trying to separate the viscera the parts tore, revealing the remains of an ulcer with thickened edges, situated partly on the anterior, and partly on the posterior, surface of the stomach. The edges of

the ulcerated surfaces were well defined and greatly thickened. The spleen was found reduced to a pulpy mass, of a blackish or dark chocolate colour, disorganized, and intolerably fetid. The diaphragm was perforated by ulceration, and a large opening resulted, through which could be perceived the base of the lung (the left) hollowed out into a large gangrenous cavity; and the whole of the lower lobe of the lung in a disorganized and broken-up condition; its upper portion was hepatized. The other viscera were healthy. There was no evidence of cancer in any part of the system.

Art. 54.—*Can the Garden Slug live in a human stomach?* By Mr. David Dickman.

(*Lancet*, Oct. 1, 1859.)

Case.—Sarah Ann C—, æt. 12, had, for the last two months, complained of feeling sick at times, particularly after meals. On the 5th of August last, she vomited up a large garden slug, which was alive and very active. On the 6th she brought up two, both alive; and on the night of the 7th she was seized with violent vomiting and relaxation of the bowels, and threw up five more, of various sizes, the smallest two inches long, and all alive.

On the morning of the 8th, when Mr. Dickman first saw her, vomiting and purging had ceased, and she complained of great pain in the left region of the stomach, and headache. Opiate powders were given, which relieved her in every way till the afternoon of the 9th, when she felt something crawling up her throat. This sensation brought on the most violent efforts of vomiting to expel what she felt at the upper part of her throat, and she frequently introduced her fingers to seize what she felt, but did not succeed. Mr. Dickman happened to call just when all this suffering was beginning to subside, at which time the sensation was felt lower—about half way between the mouth and the stomach. As expulsion by vomiting seemed hopeless, it occurred to the author that ammonia and camphor might destroy the creature, and that the digestive powers of the stomach would do the rest when the animal was dead. The dose was repeated every four hours for two days, and afterwards three times a day for two days more, with entire success. An aperient powder was given every night. After the first dose of the ammonia and camphor, all sensation of movement ceased, and she appeared as well as ever she was.

During the summer she had gone frequently into the garden and eaten freely of its produce, especially of lettuces, of which she was very fond. It appears that a family of very young slugs had been feeding on the lettuces, which the child had swallowed with very little mastication, and the gastric juice not being strong enough to act on them when alive, they fed and grew in their new habitation to their usual dimensions. During the time they must have been in the stomach, she was fonder than ever of vegetables and fruits, and would put aside the meat on her plate, and eat the vegetables only.

The three slugs that came up first were not preserved; but the five others have been kept alive, and fed on vegetables, which they preferred being cooked, having at first refused to eat them raw. They are now fed on raw vegetables.

ART. 55.—*Ulceration of the Duodenum causing death by erosion of the Pyloric Artery.* By Dr. RANKING, Physician to the Norfolk and Norwich Hospitals.

(*British Med. Journal*, Sept. 3, 1859.)

The points worthy of remark in this case, are the comparative rarity of the presence of an isolated ulcer in the duodenum, and the fortuitous accident of its occurring over a vessel of so much importance as the pyloric artery. It is easy to see that the actual giving way of the vessel took place in the train, on the patient's journey home; the effusion of blood into the bowels fully accounting for his sudden faintness. The passing of blood immediately on his arrival at home made the history complete.

The case also affords another instance of the difficulty, if not impossibility, of diagnosing, in the early stages, mere functional dyspepsia from the symptoms of organic change.

CASE.—In May of last year, I was first consulted by a gentleman, aged about 50, residing in Lowestoft. He was an emaciated man, with a sallow complexion, but enjoying a fair amount of physical power. His only complaint was one which had tormented him for years, viz., pain and flatulence after eating, which would be relieved by carbonate of soda, which he was in the habit of taking largely, with the effect of eructation of gas, followed by immediate relief.

Seeing nothing more formidable in these symptoms than irritative dyspepsia, for which a mere palliative treatment had been adopted rather than any curative measures, I prescribed a somewhat inelegant, but in most such cases a very efficient, mixture of bismuth and nitro-hydrochloric acid, in infusion of calumba, with the result of very considerable amendment. The last occasion on which I saw the patient at this time was that of a long country walk, which he accomplished with less fatigue than myself.

I lost sight of him from this period till the 2d of September last, when he called upon me in a very much deteriorated condition. His history of himself was that he had gained much in general health and strength for some time after I had seen him at Lowestoft; but, relapsing, he had placed himself under the care of my friend, Mr. Worthington, from whom I learned that he had been seized with great gastric derangement, accompanied by slight jaundice and frequent bilious vomiting, with epigastric pain, from which, however, he rallied sufficiently to travel into a distant county. But from this time he appears never to have regained his strength, and it was this fact which induced him to see me on the day last referred to.

At this time he had manifestly lost ground in appearance and strength; but still his complaints were solely such as might be referred to long continued functional dyspepsia, and such I should still have considered it to be had not his peculiarly sallow complexion led me to apprehend some malignant degeneration. I wrote to Mr. Worthington on the subject, without any misgiving as to immediate danger; but next morning I received a telegram to visit him by the next train, as he was in imminent peril.

The account I now obtained from him was, that after leaving my house he had taken a light luncheon, and returned to Lowestoft by an evening train; that on arriving at home he was observed to look extremely pallid and faint, and, on going to the water-closet, passed, *per anum*, a large quantity of blood, after which he became collapsed and apparently in a sinking state.

On meeting Mr. Worthington, and Mr. De Morgan, of London, who happened to be visiting Lowestoft, we found the patient in bed, blanched to an extraordinary degree, with jactitation, and all the well-known effects of severe loss of blood. No further action of the bowels had at this time occurred; but he had lost his epigastric pain entirely, and was himself assured that he had derived benefit from the spontaneous loss of blood.

A most careful examination was made of the abdominal region, and we came to the conclusion that there was no abdominal tenderness, no pyloric tumour, and as far as we could determine microscopically, from the examination of some grumous matter ejected from the stomach, that there was no evidence of cancerous degeneration of that organ. The patient was clearly at this time labouring under the effects of loss of blood, and the question discussed was whether the loss of blood was due to simple portal obstruction, or to ulceration of the intestines. The only point we could feel any conviction upon was that there was no evidence of cancerous degeneration. Under these circumstances our efforts were limited to the endeavour to check the intestinal hæmorrhage, and to maintain the vital powers under the loss already sustained.

He, however, derived little or no benefit from the medicines prescribed; but he lay continuously in a state of extreme anæmia, with nausea, violent action of the heart, loud systolic *bruit*, and other signs of serious loss of the vital fluid. I met Mr. Worthington three or four times after this, but nothing we could devise succeeded in rallying to an extent which could be considered satisfactory. The result was, that after several transient attacks of fainting, the patient was seized with one of more than common severity, and before Mr. Worthington, who was hastily summoned, could arrive, he expired.

The *post-mortem* examination fully explained the inefficacy of treatment, and the inevitably fatal termination. The body was exsanguine to the last degree, and emaciated. The lungs, heart, liver, and abdominal viscera were bloodless; but otherwise healthy to all appearance. The stomach was thin, and contained some grumous fluid, but there was no cancerous degeneration, or other organic change. The explanation of the symptoms was found in the duodenum, in the presence of a rounded ulceration just below the pyloric orifice, in which was an eroded opening into the pyloric artery, large enough readily to admit a large probe.

Art. 56.—*On the diagnosis of diseases of the Pancreas.* By Dr. Oppolzer.

(*Med. Neuigkeiten*, April, 1859; and *North Amer. Med.-Chir. Rev.*, July, 1859.)

The most important diseases of the pancreas, evinced by anatomical changes, are scirrhus, atrophy, hypertrophy, acute and chronic inflammation. *Scirrhus of the pancreas* is much rarer than *scirrhus around the pancreas* (scirrhus circa pancreatum); its diagnosis is therefore not easily established, and this difficulty is increased by the circumstance that the evacuation of fæces containing fat is not peculiar to diseases of the pancreas, as was formerly believed, but may also occur in affections of the mucous membrane of the duodenum, and that the digestion of amylaceous matter may be hindered without disease of the pancreas being the cause of it.

Atrophy of the pancreas has recently attracted much attention by its occurrence in diabetic patients, and by Bouchardat ascribing to these

two diseases the relation of cause and effect. It is proved that atrophy of the pancreas may be also produced by impediments in the secretory duct, or at its mouth, such as obstruction of the duct of Wirsung by foreign bodies, further by biliary calculi, cancer, and the cicatrix of a perforating ulcer near the diverticulum Vateri. It is, however, impossible to diagnosticate atrophy of the pancreas from the symptoms which accompany the disease, such as pain in the region of the pancreas, fatty stools, and emaciation.

Enlargement of the pancreas may take place in consequence of the deposit of fatty matter, whereby the acini become compressed, and the whole organ is converted into a mass of fat. In this affection also no characteristic symptoms are known, not considering that it is quite impossible to diagnosticate a lipoma within the peritoneum.

The occurrence of *acute inflammation* of the pancreas has been wholly denied. Oppolzer himself, however, saw the organ in one case swollen, reddened, and with exudation between the acini, as in parotitis. The patient suffered from oppressive pain in the pit of the stomach, and tried to obtain relief from it by taking brandy and pepper. This was followed by vomiting and increase of the pain. The vomited matter consisted of mucus and bile. The patient had a violent fever, very frequent pulse, and cold extremities, his face was shrunken, and he suffered from obstinate constipation. There was no blood vomited; and the case was diagnosticated as one of perforating ulcer of the posterior wall of the stomach. On the third day after being admitted into the hospital, the patient died, and the post-mortem examination proved the stomach to be healthy; around the pancreas, however, and between the layers of the mesentery, a large effusion of blood was found; the pancreas itself was enlarged to double its size, of a dark-red colour, and contained an exudation coloured with blood between the acini.

Chronic inflammation of the pancreas was formerly diagnosticated very frequently; but it was usually confounded with perforating ulcers of the stomach. Chronic inflammation of the pancreas may, however, coexist with gastric ulcer, or with ulcer of the duodenum, and is then a secondary affection, the ulcer of the stomach or of the duodenum having formed adhesions with the pancreas. Professor Oppolzer has observed a case of this kind; the patient, a girl, had suffered from a perforating ulcer of the duodenum, and on post-mortem examination, adhesions between the ulcer and the pancreas were found.

For some time it was considered dangerous to suppress salivation produced by a mercurial treatment, as it was thought that such a measure would give rise to an undue secretion of the pancreatic fluid and to diarrhœa. Nothing, however, is known concerning the sympathy between the salivary glands of the mouth and the pancreas, as to whether diseases of the pancreas usually cause diarrhœa.

In regard, finally, to determining the position of the pancreas by percussion, it would not be impossible to feel it in the abdominal cavity, if the abdominal parietes were relaxed, and under normal conditions; but for estimating the size of the pancreas, and for drawing conclusions in regard to its diseases, there is exceedingly little to be gained by percussion.

Art. 57.—*Ascites terminating semi-favorably by the formation of Peritoneal Fistula.* By Dr. John O. Bronson.

(*American Medical Monthly*, July, 1859.)

In this case the ascites was complicated with abscess in the abdominal parietes, and the formation of the fistula resulted from the sloughing of a portion of the floor of this abscess. The fistula remained open a year after its formation, and all the time there appears to have been free escape of fluid from the peritoneum, and often free admission of air into this cavity.

Case.—On Wednesday evening, September 17th, 1856, I was called to see Margaret B—, æt. 44, the mother of several children, and eight years a widow. She was a small, delicate woman, of nervous temperament and weak mental ability. Lying upon her bed, in a state bordering on delirium, with a countenance expressive of great anxiety, and apparently in severe pain, she presented the appearance of a woman in the parturient condition, suffering from some complication, inasmuch as her abdomen was eminently enlarged.

Upon making a proper examination, I found her abdominal enlargement was owing to ascites, and an abscess. Her bowels had not been evacuated for upwards of two weeks; but as she did not at any time enjoy this necessity of nature oftener than once in a week or ten days, this should not be considered extreme, especially as she afterwards assured me she had allowed three weeks and even a month to elapse between her evacuations, without experiencing any discomfort. Nevertheless, to unload her bowels was an evident indication in the treatment to be pursued—an indication which received early attention in the administration of an enema of a solution of soap and salt, with molasses, to be repeated until the bowels were thoroughly emptied.

Upon making an examination of the abscess, I found it to be subcutaneous, about the size of the fœtal head at term, very prominent, and exhibiting on its anterior superior face seven superficial square inches of the integument in a state of gangrene.

The situation of this abscess was just below the umbilicus, and a little to the left of the median line, the circumscribed induration being irregular, reaching entirely to the left ilium, and falling short of the right by more than two inches. This abscess appeared about three weeks previously, and had been increasing gradually, giving no uneasiness, and exciting no apprehension up to the time of her summons to me, thinking, as she did, that it would take the course of a similar one which appeared about ten years before, in the same situation, matured, and was evacuated spontaneously. Through the centre of the gangrenous portion, which presented the most favorable point for evacuation, I passed a trocar, to ascertain the character of the contents. Through the canula flowed a greenish-yellow fluid, which seemed to be broken-down pus, containing many flocculi, and of very fetid odour. Nearly two pints of this fluid were collected, being evacuated by incision. The formerly prominent anterior wall of the abscess collapsed, and resting upon the muscles beneath, presented a concavity equal to the previous convexity. The patient's pulse, which, when first noticed, numbered 130 per minute, immediately fell to 123, at which point it continued until the injection produced its effect, when it received a second diminution, and counted but 118, and had much improved in character, being less weak and less irritable.

Having prescribed for external use a lotion of the chloride of soda and a stimulating poultice composed of pulv. cinchonæ, two parts; pulv. zingiberis,

pulv. rad. altheæ, each one part; and, for internal administration, wine whey and a pill containing two grains of the sulphate of quinine, and a tenth of a grain of the sulphate of morphine, to be given every two hours; I left, to return on the following day.

On Thursday, the 18th, eighteen hours from the first visit, the patient had slept a few hours, and was much more quiet. The pulse had fallen to 112. The gangrene was evidently extending. I ordered a continuance of the previous prescriptions, with additional wine.

On Friday, the 19th, the patient's condition was much the same, with a slight diminution in the frequency of the pulse, it being 108. The gangrenous action had encroached upon the sound tissues more than one eighth of an inch in its whole circumference, thus adding about two inches to the already extensively destroyed surface.

The previous prescriptions were ordered to be continued, adding tincture of camphor to the poultice, and milk punch to be substituted for the wine whey.

On Saturday, the 20th, I found a great improvement in the patient. Her pulse was but 97. The gangrene was stayed, and at points suppuration had commenced. A continuance of the treatment was ordered.

On Sunday, the 21st, I was gratified to find the slough nearly separated, and a healthy action well established.

The pulse had diminished in frequency, and gained materially in strength. It numbered but 84 per minute.

On Monday, the 22d, the slough entirely separated, leaving a healthy granulating surface of more than nine superficial square inches in extent.

For two days the patient continued to improve in every respect, and the healing action progressed rapidly under the use of a very dilute lotion of the chloride of soda; the poultices having been discontinued shortly after the separation of the slough.

On the 24th, the interval between the administration of the pills was lengthened to four hours. No change was made in other respects.

On Friday, the 26th, the patient's pulse had come down to 78, and improved in strength and character.

On the 27th, ten days from my first visit, while dressing the ulcer, I noticed a gangrenous point, about one inch and a quarter below the umbilicus, the size of a small pea. It was not superficial only, but deep, and I was at a loss to understand it. I increased the strength of the lotion, however, and hoped for the best.

On the following day the same condition existed, and although this local manifestation portended evil, the general symptoms were flattering. The patient continued to improve. The prescription of the 26th produced most satisfactory results.

On the 29th, I was greatly surprised to find that the slough had separated, leaving a communication into the peritoneal cavity, through which had escaped the ascitic fluid, bathing the patient from the mammæ to the pubis, and wetting the bedding above, around, and beneath her. It was impossible to estimate the quantity of fluid, except from pre-existing appearance; judging in this wise, there must have been at least six quarts.

The fistula thus formed remained patulous, and the effusion continued to flow, passing away as rapidly as transuded.

The healing of the ulcer was not checked, however, and a cutaneous covering rapidly formed until it reached the fistula, a closure of which was not easy, if desirable. Various attempts were made, however, by means of astringents, stimulants, and compresses, but all to no purpose.

The effusion continued, though in diminished quantity, and by an occasional use of the podophyllin pills the action of the bowels was made regular.

Three weeks from her summons to me she was up and attending to her household duties, having in that short space of time recovered her strength and attained to such a degree of health as she had not enjoyed for a long period.

For four or five months the patient was under my observation, and though making use of various remedies to counteract the transudation, it still continued. Diuretics, cathartics, and deobstruents, individually and combined, served but temporarily to check the effusion. There seemed to be no relief from this irksome malady. The poor woman was obliged to wear some absorbing material continually.

The question of closing this peritoneal fistula was often presented and often met in the negative, inasmuch as it did not seem proper to dam up the stream while the fountain continued to flow.

For a period of more than a year the patient was seen from time to time, and the effusion continued unabated. Her general health improved, however, and became better, indeed, than it had been for several years.

The case was seen respectively by Professor Henry G. Cox, Dr. W. F. Holcomb, Dr. C. A. Budd, and Professor E. R. Peaslee, all of whom expressed themselves as to its being unique. One circumstance connected with the case marked it as peculiar. It was this. By certain movements, air was received into and expelled from the peritoneal cavity, producing at no time and in no way any unpleasant results. This peculiarity I think noteworthy, suggesting as it does certain practical ideas.

Art. 58.—*Notes on the management of Abscess of the Liver.* By Dr. John Jackson.

(*Lancet*, Aug. 13, 1859.)

There is sound sense in the practice inculcated in these notes, as the following quotations will sufficiently show.

"When," says Dr. Jackson, "an abscess in the liver is once formed, and there are distinct evidences of suppuration, the time for bleeding, mercurials, and other antiphlogistic remedies has passed. Nothing is more hazardous to the patient now than an interference with the plan which nature is setting up for the ultimate destination of the abscess. Danger would be incurred by any direct attempt to obstruct or direct what seems to be the settled design of nature, which sometimes resents the idle interference of art when it comes too late.

"In Europeans resident in Bengal, it is not often that abscess makes its way towards the anterior walls of the abdomen, or that adhesions take place which lead to pointing and the bursting of the abscess, like that in common phlegmon on the surface of the body. The abscess is generally of a considerable size; it occupies the central part of the organ; is deep-seated; and shows but little tendency towards the situation of the abdominal parietes, which no doubt is the best course for it to take, if it is to be treated by artificial means.

"But in the natives of India there is a much greater proportion of superficial abscesses that point towards the abdominal muscles; and as in them the febrile action is much less severe, the abscesses are more limited in extent, and can therefore be more beneficially treated by

artificial means than is the case with the Europeans. In nine cases of the disease in natives, under my care in the year 1853, in which there was operation by puncture through the abdominal muscles, eight were successful. In Europeans, a successful issue of abscess of the liver consequent on operation is extremely rare, and my experience with respect to them disposes me to object, most generally, to operation in their case.

"There are many ways which nature adopts for the discharge of an hepatic abscess; and the provisions which are so admirably made for the security of the patient form one of the most striking instances of protective power in the human economy. It is not often that an abscess breaks down suddenly and empties itself into the cavity of the abdomen, or into the thorax, without the various preparatory stages of adhesion, effusion of coagulable lymph, or other circumstances or conditions most favorable to the safety of the discharge; and when eventually the abscess does give way, it most generally occurs after there has been an abundant secretion of pus formed, which, by continued pressure and progressive absorption of the outer walls of the abscess, reduces them so much, that there is not strength in them to withstand the increasing amount of pus secreted and the distension caused, and the abscess bursts.

"When an abscess forms in the convex portion of the liver, and adhesion is taking place between that organ and the diaphragm, as well as between the upper serous surface of the diaphragm and the pleura of the lung, any further administration of mercurials, or antiphlogistic treatment, while no check can be put to the disease, would at once interfere with the protective power which nature is setting up. The administration of mercurials prevents the formation of fibrin and removes it from the blood, as well as absorbs what has already been secreted; and, whilst ineffectual in preventing the further formation of pus and limiting the abscess, it lowers the system, and subsequently prevents a more favorable termination of the disease. So that no plan is more prejudicial to the welfare of the patient than a continuance of a mercurial course after an abscess is once formed.

"At the commencement of the treatment the practitioner is anxious to witness the specific influence of the mercurial, and, after full venesection in the stout, healthy European, he pushes it on, in full hopes of obtaining the desired salivation. But it is necessary for him to bear in mind, as the disease goes on, that if a full and fair trial of the mineral has been given, and no specific effect produced, the further continuance of it is noxious, and interferes with the very means which nature may be setting up for a cure. Salivation (as the specific effect of the mercurial) so very rarely happens after an abscess has formed (and never, that I have seen, in the acute stage), and the evidence of its action is so generally a proof that no suppuration has taken place, that it is scarcely a matter of surprise that the use of the mineral should be carried so as to produce its effects if possible, and thus settle all doubts in the mind of the medical attendant as to the actual condition of the patient.

"It might be supposed that when an organ of such size and importance as the liver has become so affected as to cause abscess, there

would at once occur some one sign as pathognomonic of the event. The catalogue of symptoms, when all are present, must leave no room for doubt. But it frequently happens that some one or other of the disturbing causes will interfere with the diagnosis, and thus render evidence doubtful and imperfect. I have known of instances where the symptoms were so obscure, that the existence of liver abscess was not suspected till autopsy proved it; and I have frequently heard the remark of an able and experienced surgeon, that he believed that no one who had been many years in India, and had been subjected to any disease of the liver or to dysentery, could feel perfectly sure that he had not an abscess in his liver."

"Long experience has convinced me that there is no course which hepatic abscess, when once formed, can take, that holds out such good prospects of recovery by natural means as when the channel for the discharge is through the right lung; and although the abscess may be opened externally by the aid of the knife, either through the abdominal parietes or through the ribs, or may open themselves by ulceration into the stomach or bowel, there is not the least doubt that the passage through the lungs is the most favorable course for the abscess to take.*

"It is very necessary that every medical man should be aware of this fact, so that he may not be tempted to interfere with the natural process, by depletion or blisters, or other means, to remove the irritating cough which sometimes shows itself when the abscess is making its way through the diaphragm, and calling into action the pleuritic surface of the lung previous to adhesion. Mild measures and soothing remedies are the only plan of treatment which should be adopted, and nature is to be aided by the best means in our power to effect the objects which she has in view. The patients that have come under my eye who have recovered from abscess of the liver making its way through the right lung are very numerous. Several of them are now in England; others are still in India, where they are carrying on their duties without any appearance of ill health. In the recovery, however, of such patients, and during the early period of the discharge of the abscess, whilst the chasm in the liver is unclosed, and no granulations formed, and the passage of the lung free, much discomfort may arise from air passing down into the hepatic cavity, and great distress be induced, until, by change of position, bandages, and other supports, relief be afforded, and the air gradually expelled. When the abscess is very large, and the opening through the lung extensive, this will occur; but the cases are not common, and the plan adopted by nature is the best calculated to prevent the admission of air into the opened cavity, or giving rise to long-continued and purulent offensive discharge.

"In artificial openings, whether between the ribs or through the parietes of the abdomen, the mode of opening the abscess is of much importance. If the opening is made large, and a tent inserted, under

* This is my own experience, and I state it thus strongly from being aware that it differs from that of others of high authority, who hold that the passage through the bowels is the safer channel.

the notion that there will be a better escape for the matter, air will be admitted, which will render the discharge offensive; there will be a discharge of bile, for the biliary ducts are soon broken down, and the patient will be unable to recover his strength under any plan of treatment, but will sink under the continued exhausting discharge. But when the opening is small, and the matter allowed to exude without any amount of pressure, the opening closed by adhesive plaster, strong tincture of iodine painted over the tumour, the body carefully bandaged with compresses, and the patient supported with good diet, porter, and wine, the kidneys being gently acted upon with hydriodate of potass with cinchona, there will be great reason to look for a happy result."

ART. 59.—*Permanent collapse of an Hydatid Cyst of the Liver after puncture.* By Dr. W. BUDD, Senior Physician to the Bristol Infirmary.

(*Brit. Med. Journal*, April 2, 1859.)

CASE.—Isaac Thomas, æt. 35, a collier by occupation, a man of spare habit and faded appearance, was admitted into the Bristol Infirmary on June 2d, 1858, on account of a painful swelling in his right side. He had enjoyed pretty good health until about two years before admission, when he began to suffer pain in the region of the liver, and soon after perceived an enlargement there. This enlargement had gone on gradually increasing until it attained the limits it presented when he came to the hospital. He had meanwhile suffered a good deal in general health, and had lost much flesh and strength. There had never been any jaundice. On examination, a large tumour was found in the right hypochondrium, extending from the margin of the ribs to about two inches below the umbilicus, and describing in its outline, as far as it could be traced, the segment of a circle, of which this might be taken as the radius. The tumour was not tender on pressure, but had been at various times the seat of severe pain. The only other circumstance which it seems important to mention is, that the patient had for some months past been suffering from chronic catarrh, and that he presented the characteristic indications of pretty extensive emphysema of the lungs.

From the history of the case, and from the even globular character of the tumour, I came at once to the conclusion that it was an hydatid tumour. I may add, that I failed, however, to satisfy myself of the occurrence of the peculiar fremitus which percussion is said to elicit from tumours of this particular kind.

On July 18th, in order to verify the diagnosis, the tumour was punctured with a grooved needle by my colleague, Mr. Prichard, and about one ounce of fluid was withdrawn from it. This fluid was perfectly limpid when drawn, but, on being allowed to stand, threw down a slight sediment, which, on microscopic examination, was found to consist entirely of amorphous granular matter. No echinococcus-hooklets could be discovered in it. The most important character I have reserved for the last. The fluid did not contain even a trace of albumen. I looked upon the entire absence of this product as decisive in confirmation of the diagnosis.

Of all the varieties of cysts of which the human body may become the seat, the hydatid cyst is, as far as I know, the only one (of any large size, at least) which yields a limpid fluid, entirely devoid of albumen. The fact is not only

peculiar (as I believe) to this kind of cyst, but, if I mistake not, bears a physiological relation to the parasite of which it is the nidus. In the thickly peopled colony which inhabits an hydatid cyst, a material had lain for indefinite periods in what may be called the *fossil* state, and without causing the slightest injury to the persons who were the unconscious bearers of them.

The problem for the physician is, if possible, to compass the death of the brood of echinococci without danger to the subject infested with them.

To kill the parasite, the simplest measure is to withdraw, by tapping, the fluid in which they live. Why it should be is not at all clear; but experience has shown that, in the great majority of cases, the sac, once emptied of its fluid, never fills again; and that the death of the parasites (from want of nourishment, I presume) is the result.

Unfortunately, this operation exposes the patient to two very great dangers. In tapping an hydatid cyst of the liver there is, on the one hand, great danger of the fluid escaping into the peritoneum, and setting up inflammation there; and on the other, especially if care be not taken to prevent admission of air, there is risk of exciting suppuration of the cyst. Where, however, the cyst adheres to the abdominal walls, the first danger is eliminated, and the second may generally be obviated by the proper precautions.

In the case of Isaac Thomas there were several circumstances which led me to the conclusion that the cyst did adhere to the abdominal walls. One of these was the severe pain which he had suffered in the situation of the tumour, at times when there was no evidence of its growing rapidly. But still more significant was the fact that change of position did not alter in any way the limits of the tumour, or affect the position of its point of maximum prominence. It was observed, in addition, that by no kind of manipulation could the abdominal walls be made to shift, or slide over it.

The principal objection to the performance of the operation being considered, therefore, to be out of the way, it was determined to treat the case, in the first instance, by tapping the cyst so as to withdraw all its fluid. In the event of this expedient failing, I proposed to attempt to *poison* the echinococci by injecting a small quantity of tincture of iodine into the cyst with a syringe constructed on the same principle as that which is used for the injection of nævi. Galvano-puncture was another measure held in reserve, in case neither of the other two should succeed.

On September 3d, in accordance with these views, my colleague, Mr. Prichard, tapped the cyst, and withdrew from it twenty-three ounces of a perfectly limpid fluid, void of albumen, as before.

In performing the operation, care was taken that no air should get into the sac. The result was an immediate collapse of the tumour, which, from extending to two inches below the umbilicus, immediately before the operation, could scarcely now be felt below the margin of the ribs. This change was attended by a sense of very great relief. No ill consequences followed the tapping, and in two or three days the patient felt quite well and comfortable.

The cyst did not fill again; and when the man left the house, in the middle of October, nothing could be felt of the tumour. At my request, he came back about two months afterwards, merely to show himself. As he was still suffering from catarrh, he remained a short time in the hospital. During this period he was examined repeatedly with very great care, but no external indication could be discovered of the former cyst. He was entirely relieved from all the symptoms which formerly attended it, and he had gained much flesh and strength.

I ought to add that, on examining with the microscope the sediment which was thrown down by the fluid taken from the cyst on the second occasion, I found four very beautiful echinococcus-hooklets in it.

Art. 60.—*On Faradization in Lead-Colic.*

By M. Briquet, Physician to the Hôpital la Charité, in Paris.

(*Medical Times and Gazette*, July 23, 1859.)

"We have lately witnessed," so writes the able foreign correspondent of the 'Medical Times and Gazette,' "in the service of M. Briquet, at the Hôpital la Charité, the good effects of the application of 'electricity by induction,' or Faradization, as it is now commonly called, in the treatment of lead-colic. The following case, being one of several which we have lately seen brought to a successful termination, will serve as a suitable introduction to the remarks which form the sequel.

"A house-painter, æt. 34, was admitted a few days ago, labouring under all the symptoms of lead-colic. It was his third attack. The first occurred as far back as 1843, and lasted eight days; the second took place three years ago, and he was then under treatment for a month. For some weeks prior to admission on the present occasion he suffered from uneasiness, with dull pains in the stomach and bowels. These pains assumed an acute character only two days before his entry into the hospital, and were accompanied with nausea and vomiting. At the visit, and when first seen by M. Briquet, he was writhing with pain, and constantly changing his position in bed. During the paroxysms, between which the intervals were but short, he lay on his face with the knees drawn up. There was considerable hardness and retraction of the abdomen, rendering it impossible for him to assume the erect position. The pain was not confined to the abdomen, but extended to the muscles of the chest, as well as to the lower extremities—in the latter he complained of a feeling of numbness. The pain was, however, most acute along the course of the rectus muscle of the left side, and over the hypogastric region on that side. The features were contracted, and expressive of great suffering, but there was neither fever nor constipation. After a very short interrogatory, M. Briquet, having no doubt as to the nature of the affection, proposed the immediate application of electricity. The pain being, as we have already stated, more severe on the left and lower portion of the abdomen, he selected this spot for the Faradization, which was conducted as follows:—A wet sponge was attached to one of the wires of the apparatus, while a metallic brush was attached to the other. These, it may be remarked, are the appliances in use when the Faradization is to be confined to the skin. The sponge was then placed in contact with the body at the superior portion of the left rectus muscle of the abdomen, while the metallic brush was passed over that part of it where the pain was most severe. The machine, which at first was but feeble, was made by degrees to attain its maximum of intensity, and as it increased in power, the brush was passed more and more rapidly over the skin, until it produced a considerable

amount of redness. The operation lasted precisely three minutes and a half, at the end of which every symptom of colic had disappeared, and the patient, who on admission was doubled up during the paroxysms, was now able to stand erect, and walk about the ward with the most perfect ease and altogether free from pain. Of course, it will occur to all who have had any experience in this peculiar affection, as it did to ourselves, that the mere removal of the local pain is not all that is indicated in its treatment; and hence that electricity applied, as described above, can only be viewed in the light of a palliative, other remedies being necessary for the elimination of the lead with which the system is supposed to be charged, and on the presence of which the colicky pains are presumed to depend. This is no doubt true; but the removal of one of the most painful and alarming symptoms by such a simple and speedy process as that of Faradization is, from the novelty of the measure by which it was accomplished, not unworthy of attention.

"The question naturally occurs, Faradization being merely palliative, and the exciting cause of the colics still in operation on the system, are these latter liable to return? On this point we can speak most decidedly, as well from our own observation as from the statement of M. Briquet, whose experience in the treatment of this affection has been extensive. In only one of the cases which we have observed, was a second Faradization necessary, the others having been completely cured of their colics by one *séance* only. M. Briquet's experience in somewhere about a hundred cases carefully observed by him, goes to prove that a relapse is by no means common, and if it does take place, it is generally after an interval of five or six hours; but that if the patient pass twenty-four hours without any return of the colicky pains, no further Faradization will be necessary. Having got rid of the most urgent and the most alarming symptom of this disease by means of Faradization, the medical, or rather the constitutional, treatment employed by M. Briquet with a view to the elimination of the lead, is extremely simple, as compared, at least, with the medication generally in use.

"This treatment is as follows: the Faradization terminated, a sulphur bath is ordered, which is repeated every second day during the patient's sojourn in the hospital. He is ordered to drink every day about four pints of lemonade, to which are added from thirty to forty drops of dilute sulphuric acid. A gum potion is also prescribed, containing from thirty to forty grains of alum; and each night, or every alternate night, as the case may be, a pill is ordered containing one grain of the watery extract of opium. It will doubtless appear singular, seeing that obstinate constipation is so frequently a concomitant of this disease, that in this treatment there exists no element of a laxative nature. Purgatives he never prescribes, and rarely ever has recourse to an enema. In almost all cases he has remarked that the bowels begin to act spontaneously from one to three days after the Faradization has accomplished the removal of the abdominal pains. The object of this treatment is simply the elimination of the toxique principle from the system; it exercises no influence whatever over the colics, nor is it intended to do so. Seeing that the first part of the

treatment, namely, the removal of the pain of the abdomen by means of Faradization is somewhat novel, it may not be amiss to inquire here on what pathological grounds it is founded. Among the earlier pathologists there existed little or no difference touching the seat of this affection; all of them referred it to the digestive tube either in part or throughout its entire extent. Of the cause and origin of the pain, however, there has been, and still continues, much diversity of opinion; some maintaining that it originates in the contact of the particles of lead with the mucous lining of the digestive tube (a doctrine which, by the way, is no longer tenable, since the possibility of absorption of lead by the skin has been admitted); some think that the pains or colics result from an inflammatory condition of the mucous surface of the intestines, while others hold they are the result of the distension produced by accumulated fæces. Tanquerel, a man of no mean authority, traces the colics to functional disturbance of the great sympathetic nerve. Giacomini, of Padua, discarding all these theories, was the first to enunciate the views we now see acted on by M. Briquet; to wit, that the pain in lead colic has its seat not in the digestive tube at all, but in the muscular parietes of the abdomen and the diaphragm. This same opinion we find hinted at, although not formally expressed, by Andral, Grisolle, and others whose attention has been specially directed to this malady. M. Briquet's reasons for his faith in the theory of Giacomini are founded on the following observations:—If, during the examination of a patient suffering under lead-colic, moderate pressure be exercised over the abdomen, by means of the fingers, in such a manner as to affect only the skin and the adjacent muscles, without interfering with the more deeply-seated parts, acute pain will be produced identical in its character with that experienced during a paroxysm of colic. Again, if pressure be exerted over the abdominal muscles at points under which the intestinal canal does not run, as, for example, over the crest of the ilium, an acute pain will invariably be the result. These two reasons taken in connexion with the extension of the pain to the muscles of the back and limbs, which is often observed in painters' colic, he considers conclusive as to the purely muscular character of the pains. The constipation, he believes, has no connexion whatever with the abdominal pain, as it sometimes persists for days after the latter has been removed by Faradization. The nausea and vomiting he also regards as purely sympathetic, depending, it may be, on the extreme sensibility of the muscles, and this opinion derives countenance from the fact that these symptoms invariably disappear when the hyperæsthesia has been removed. Neither Briquet, nor any other holding the same pathological views in reference to this disease, attempts to explain why, by preference, the abdominal muscles are those chiefly affected. In the present state of our knowledge this point involves some difficulty. Both Duchenne, of Boulogne, and M. Briquet, however, endeavour to account for it by adopting the hypothesis that there exists some elective affinity between the lead poison and this particular portion of the muscular system. Faradization, according to M. Briquet, acts purely and simply as a revulsive in this affection, and is perhaps one of the most powerful agents of this class which we

possess. For this reason, the skin is Faradised until it becomes red, and almost invariably as soon as the redness is produced, the abdominal pains immediately disappear. Sometimes this operation requires great firmness on the part of the operator, and no small amount of endurance and courage on the part of the patient, the pain experienced being excessive, as evidenced by the cries and efforts of the patient to escape from the hands of the operator. The amount of suffering should, however, prove no objection to the process, as the Faradization can be perfectly carried out while the patient is under the influence of chloroform, the peculiar action of which does not, we believe, interfere in any way with the curative effects of the electricity."

Art. 61.—*The diagnosis and treatment of Hepatic Colic.* By M. Trousseau.

(*Journ. de Med. et Chir. Pratiq.*, Jan. 2, 1859.)

Professor Trousseau recently directed the attention of his clinical class, at the Hôtel Dieu, to the frequency with which cases of hepatic colic are mistaken for other affections. Although, in its severe form, hepatic colic is readily recognised, yet a slighter form, which is more common, especially in women, it is very generally ignored. The reason is, that the pains caused by the small calculi are felt principally in the epigastrium, from which they radiate through the abdomen, the chest, the back, and sometimes even down the thighs. The practitioner, accordingly, is very apt to refer the pain to other organs than the liver, and, in particular, to ascribe it to a spasmodic affection of the stomach. The opinion appears, in many cases, to be further confirmed by the presence of vomiting.

M. Trousseau illustrated these observations by two cases, both women, of sedentary occupation, from forty to fifty years of age. In the case of the first, pain in the epigastrium, with vomiting of matter not containing bile, occurred two days before her admission into the hospital. The severe pain was succeeded by a feeling of languor and fatigue. The fæcal matters passed by this woman were collected, washed, and carefully examined, when a calculus of the size of a pea, consisting of cholesterine, was found. The second woman had been subject to "cramps of the stomach" for several years. These had been treated without success. When she came under M. Trousseau's care, she had been suffering for several days from attacks of severe pain starting from the epigastrium, and darting down through the belly into the right flank and into the back. These attacks came on two or three times a day, and lasted for from half an hour to two hours. On the 12th of March the pains continued for five hours, on the 13th for eleven hours: they were accompanied by non-bilious vomiting, and on the evening of the last-mentioned day they ceased suddenly, and were succeeded by slight shiverings and well-marked jaundice. The bowels having been confined for some days, a purgative was administered: the fæcal matters were washed, and five calculi with polished facettes were discovered.

Before alluding to the treatment, M. Trousseau entered somewhat

minutely into a consideration of the symptoms in these and similar cases. He laid it down as a general rule, that if, in addition to pains of the character described above, there be vomiting of matters not coloured with bile, the symptoms depend upon the presence of a calculus in the common duct; and that, ninety-nine times out of a hundred, the presence of bile in the urine will next day confirm the diagnosis. It must, however, be borne in mind that, although the absence of bile in the matters vomited, and the subsequent occurrence of jaundice, entitle us to give a positive diagnosis, the opposite circumstances—namely, the presence of bile in the vomited matters, and the absence of jaundice—do not justify us in absolutely denying the existence of hepatic colic. In most cases the jaundice is so slight as to escape the attention of the patient; indeed, generally it is only by the condition of the urine that its existence is revealed. In addition to pain, vomiting, and the presence of bile in the urine, another diagnostic means is at our disposal. This consists in an examination of the fœcal matters: for this purpose, the evacuations are to be collected from the time of the cessation of the attack during the next three or four days, as a calculus may occupy this time in passing from the duodenum to the rectum. The matters so collected are to be washed in a hair sieve until the solid matter is completely broken down. Under any other way of proceeding, the calculus might escape detection. It does not always happen, however, that the calculus, the cause of the suffering, is discharged. It not unfrequently happens that there are concretions in the gall-bladder which are too large to pass along the cystic duct. In such cases, the bodies get partially impacted in the duct, and give rise to much suffering; but on their going back into the gall-bladder, the relief is as complete as when they drop into the duodenum. In these circumstances, we are to be guided in our diagnosis by the sudden appearance and disappearance of the symptoms, taken in connection with the absence of symptoms pointing to the disease of other organs.

With regard to treatment, nothing can be done to get rid of calculi already existing; our attention must, therefore, be limited to the treatment of the attack of hepatic colic, and to the preventing the formation of fresh calculi. The treatment of the attack is not very satisfactory, and often the remedies employed do more harm than good. Thus many practitioners prescribe opium; but as opium checks all the secretions, with the exception of the secretions of the skin, it is unfavorable to the accumulation of bile in the gall-bladder, which acts beneficially in helping the expulsion of the calculus. The pain, it is true, is deadened by opium, but the expulsion of the calculus is delayed. The relief of suffering is, according to M. Trousseau, more advantageously obtained by chloroform or sulphuric ether given internally, while frictions with an alcoholic extract of belladonna, reduced by water to the consistence of a syrup, are made over the seat of pain. The ether is generally given in the form of capsules, each of which contains eighteen drops; in this way a considerable anæsthetic action is produced, while the biliary secretion is not interfered with. Prolonged hot baths sometimes give relief, though in general they produce little effect. When the attack is past, M. Trousseau generally gives,

with a view to improving the digestion, seven or eight pills daily, each containing three grains of extract of ox-gall.

The real treatment of these cases. however, is prophylactic. As above stated, M. Trousseau thinks we cannot act upon calculi already formed, although M. Barthe supposes that, by a vegetable diet, combined with the use of alkalies and turpentine, biliary concretions may be disintegrated. All we can hope for, therefore, is to prevent the enlargement of existing calculi and the formation of new ones; and this we must do by impeding the production of cholesterine. Now, as cholesterine is a fatty substance, we must, in order to diminish its quantity, diminish all the fatty matters of the economy. For this purpose we must look to alkaline substances, which saponify the fats and render them more soluble; to exercise, which promotes their combustion; and to an alimentation which shall contribute as little as possible to their development. Peyrilhe, the first professor of Therapeutics in the faculty of Paris, noticed that, in large herbivorous animals, such as oxen and cows, which are very subject to hepatic gravel, the gall-bladder was filled with calculi from the month of April to the month of June, and that it ceased to contain any from the beginning of September until the end of December. He thought that the production of cholesterine was favoured in these animals by a dry alimentation, consisting in part of oleaginous grains; while, on the contrary, the chlorophyl, or green colouring matter of plants, acted as a special solvent of this fatty matter. Peyrilhe was right; but he had not noticed another important element in their cases—the influence of prolonged repose. In man, a sedentary life acts in the same way as the stalling of oxen; and this is the reason why women are more subject to biliary calculi than men. Green vegetables, though acid, make the urine alkaline; they possess the property of saponifying fats; and you have thus, in exercise on the one hand, and in the use of green vegetables or alkalies on the other, the principal elements of the prophylactic treatment of biliary calculi.

To patients suffering from this affection, we should, therefore, continues M. Trousseau, prescribe walking exercise, a regimen, having for its basis green vegetables, to which may be added lean meat and fresh fruit thoroughly ripe. The patient should abstain from eating oleaginous matters, such as fat of meat, butter, oil, milk; he should also partake sparingly of amylaceous or gelatinous matters, which, on account of the large proportion of carbon they contain, have the greatest analogy with fat. We may at the same time recommend the use of alkaline mineral waters, such as those of Vichy, the Mont Dore, &c. Not that these are to be given so as to saturate the system with the mineral principles of the waters, but only in such a way as to improve the general health. They should not be given continuously for too long a time, but their use should be interrupted and again resumed.

ART. 62.—*A musical bruit, not yet described, heard at the middle and lower part of the sternum of a man affected with Cirrhosis of the Liver.* By Dr. LEMAIRE.

(*L'Union Méd.*, Jan., 1859; and *Med.-Chir. Review*, Oct., 1859.)

CASE.—Joseph V—, æt. 43, admitted into the Charité, September 6th, 1858, had always enjoyed good health, with the exception of slight bronchitis seven years ago; until two months before admission his abdomen was seen to enlarge; loss of appetite and diarrhœa followed, with thirst and loss of strength. On admission the abdomen was swollen, tympanitic above, fluctuating at the inferior part; the dulness of the liver was slightly increased, that of the spleen considerably. The tongue moist; the pulse 80, regular; the heat of the skin normal. The heart occupied its normal limits; the valvular sounds entirely normal (by an evident misprint they are stated to have been *tout à fait anormaux*), without any murmur. Over the middle and inferior part of the sternum, over the right cavities of the heart, a musical sound was heard, which so closely resembled a sibilant râle as at once to suggest the presence of bronchitis, but on examining carefully the different parts of the thorax, the vesicular murmur throughout was found soft, and unaccompanied by any kind of râle. The bruit was continuous, and not isochronous with the beats of the heart. It was increased at each inspiration, and it increased in intensity as respiration became accelerated. The bruit continued when respiration was arrested. A strong continuous blowing murmur was heard in the vessels in the neck. The bruit continued on the 8th, on the 9th it changed to genuine *bruit de rouet*, which was heard in the præcordia, and which increased in intensity the nearer one approached to the xiphoid process; it varied in character, but was persistent, even when respiration was arrested. The bruit became feebler as death approached, which occurred on the 24th. Bouillaud declined offering an opinion as to the cause of the sound. The post-mortem threw but little light on the subject; the heart and chief arteries were perfectly healthy, nor was there any marked abnormity in the lungs. The liver was in a state of advanced cirrhosis, but the fossa of the vena cava was almost obliterated, and the vein seemed to have been compressed between the edge of the liver and the spine. It is possible, according to the author's opinion, that this compression was the cause of the abnormal sound; but it was by no means proved that this compression really existed.

ART. 63.—*On inflammation of the Thoracic Duct.* By Dr. J. WORMS.

(*Gaz. Hebd. de Méd. et Chir.*, May 6, 1859.)

This case occurred in the military hospital of Gros-Caillou. The patient's age was forty. The inflammation appears to have been propagated to the subclavian vein from the thoracic duct and receptaculum chyli, and the symptoms of stasis of the venous blood in the upper extremities of the left side is explained by the consequent formation of a clot in the subclavian vein. The jaundice is referred by Dr. Worms, not to any particular affection of the liver, but rather to a change in the blood consequent upon the shutting off of the supplies of fresh lymph.

Case.—The patient, æt. 40, was aroused, in the night of the 15th of December, 1858, by a violent pain, seated deeply in the abdomen, and radiating towards both sides; during the following days this pain subsided somewhat, but violent fever set in. On the fourth day acute pain in the muscles of the forearm supervened, the member becoming red and swollen; then the thighs and the calf of the legs become equally painful, and the evil increased from day to day.

The patient entered the hospital on the 25th of December; the sclerotica was slightly icteric; the lips, tongue, teeth, and skin were dry; the pulse full, hard, and 80 in the minute; the abdomen tympanitic, but not painful. The left arm could not be moved; the anterior and posterior side of the forearm was the seat of considerable tumefaction and of intense pain. The superficial veins of the whole limb were much distended, and painful on pressure; they presented the peculiarity that it was impossible to make the blood which they contained progress towards the shoulder; while, on the contrary, less resistance was encountered in making it go toward the back of the hand. This circumstance led to the supposition that an obstacle existed to the venous circulation; in examining the whole venous system carefully, no hardness was found except in the left subclavian, which was hard, and rolled underneath the finger. All the other large veins were much distended, and the patient complained of an almost intolerable pain which exactly followed their track. The patient was treated with sulphate of quinia in combination with camphor, in order to combat the general septic condition, and applications of camphorated alcohol were applied to the tumefied arm.

On the 26th an aggravation of all the symptoms had taken place; the emaciation had made rapid progress; the patient's look was unsteady; the sclerotica was much more icteric, and the patient was in a state of drowsiness, when not aroused by words. The swelling of the arm was much increased.

During the following days the patient became rapidly worse; the icterus became general, and assumed a shade approaching to green; the intellect was troubled; the evacuations became involuntary, and convulsive movements of the muscles of the lower jaw supervened. The patient died on the 30th of December.

Autopsy.—All the tissues of the left arm were coloured yellow; the aponeurosis was sheathed with an organised fibrinous exudation; all the veins were distended by viscous blood, which was completely discoloured, and resembled clear bile. From its passage over the first rib to its junction with the internal jugular, the left subclavian vein was very adherent to the surrounding cellular tissue, and was obliterated by a yellow and hard fibrinous clot.

The whole venous system was distended with uncoagulated blood, and the intestines were much distended by gas. About the cæcum, and in a portion of the ascending colon, deep ulcerations of the isolated follicles existed, without the glands of Peyer being enlarged. The spleen was triple its normal size, and its tissue reduced to a pulpy mass.

The entrance of the thoracic duct into the left subclavian vein was surrounded by an indurated cellular mass; the duct was filled with a large quantity of phlegmonous pus; the receptaculum chyli measured five centimetres in diameter; its walls were coloured light yellow, and adhered to the surrounding cellular tissue; the tunics of the whole duct were thickened and quite opaque, the internal coat was softened, deprived of epithelium, and presented small and red ecchymotic spots.

The vertebral column was healthy. Numerous swelled glands surrounded the receptaculum chyli; some of the lymphatics joining it also contained pus.

The glands from which these vessels proceeded were white and softened in the part in which the lymphatics originated; the opposite part was hyperæmic and harder. The other viscera, and especially the liver and biliary ducts, presented nothing remarkable.

Art. 64.—*On the Changes of the Urine in disease.* By Dr. Brattler.

(*Med. Cen. Zeitung*, 83, 1858; and *North Amer. Med.-Chir. Rev.*, May, 1859.)

Dr. Brattler has made a series of very accurate investigations on the changes of the urine in typhus, morbilli, scarlatina, diseases of the heart, &c., and he has embodied the results in an elaborate treatise, entitled "*Beitrag zur Urologie im Kranken Zustande;*" München, 1858, *Joh. Palm's Hofbuchhandlung.*

The author gives the following summary of his urological observations:

Casting a retrospective glance upon our investigations and experiments, we find that the urine does not suffer in disease any changes peculiar to the different morbid conditions, but that these changes are in relation with definite processes going on in the organism. The urine of a case of typhus, pneumonia, cholera, or Bright's disease, may have one and the same qualities, for the very reason that certain processes, which modify the secretion of urine, may take place in any of these diseases.

The quantity of urine. It is *diminished:* In the commencement of nearly all febrile diseases; in diseases of the kidneys, when the uriniferous tubules are obstructed, (morbus Brightii.)

In diseases in which the organism suffers great losses of serum, as excessive diarrhœa, cholera, copious perspiration.

In diseases of the circulatory and respiratory organs, in consequence of less blood being furnished to the aortic system, and therefore to the kidneys, as in disease of the heart, and in pleuritic exudation.

It is *augmented:* By the resorption of hydropic effusions and exudations.

In polydypsia, diabetes insipidus.

Urea. It is *diminished:* In the re-convalescence from all acute diseases, in which the organism has suffered a considerable loss of substance through fever, as in this case the nourishment carried into the system is used for the reparation of the lost nitrogenous tissues.

In diseases of the digestive organs which hinder the resorption of the ingesta, as chronic vomiting in atrophy after typhus, and cancer of the stomach.

In diseases of the kidneys, interfering with their functions, (morbus Brightii.)

In diseases of the circulatory and respiratory organs, in consequence of less blood being furnished to the aortic system, and therefore to the kidneys.

It is *augmented:* In all diseases accompanied by fever, viz., by elevation of temperature. (The frequency of the pulse bears no con-

stant relation to the secretion of urea.) The secretion of urea is the greater the higher the temperature rises.

An exception takes place only when in febrile diseases the functions of the kidneys is at the same time interfered with, be it by disease of these organs themselves, or secondarily by the influence of other organs.

In diseases in which the urea has been retained for a long time in the blood by functional disorder of the kidneys, after removal of the difficulty, as morbus Brightii, cholera, and disease of the heart.

By the resorption of hydropic effusions, as morbus Brightii, and dropsy from disease of the heart.

Chlorides. They are *diminished:*

In all diseases in which exudations or transudations take place, these effusions being rich in chlorides, as in typhus, pneumonia, pleuritis, Bright's disease, cholera, acute rheumatism, &c.

In diseases of the digestive organs which hinder the resorption of the ingesta.

In diseases of functional disorders of the kidneys with diminished urinary secretion, as in Bright's disease, and disease of the heart.

They are *augmented:* By the resorption of hydropic effusions.

Phosphoric acid. It is *diminished:*

In diseases or functional disorders of the kidneys with diminished urinary secretion, as in Bright's disease, and disease of the heart.

In diseases of the digestive organs which hinder the resorption of the ingesta.

It is *augmented:* In acute febrile diseases by the increased metamorphosis of tissues containing phosphorus.

The increase of phosphoric acid is, however, not as constant as that of urea. In diseases in which the phosphoric acid has been retained for a long time in the blood by functional disorder of the kidneys, after removal of the difficulty, as Bright's disease, and cholera.

According to *Bence Jones,* in acute nervous diseases, and in osteomalacia.

ART. 65.—*Case of true recovery after Bright's disease.* By Dr. ROBERT SCOTT ORR, Dispensary Physician to the Royal Glasgow Infirmary.

(*Glasgow Medical Journal,* Oct., 1859.)

This case must be added to the few already on record. That the recovery was real was verified by dissection eight years afterwards, when the patient died from obstruction of the bowels.

CASE.—In the summer of 1851 I attended, at Dunoon, where I then practised, W. M'D—, a gardener to trade, in very comfortable circumstances, and possessed of some property in Dunoon, for an illness which I considered to be Bright's disease of the kidney. He was then 57 years of age, of thin, spare habit of body, exceedingly active and energetic in the pursuit of his business, and of very temperate and regular habits. His complexion was dingy and sallow, and I often felt inclined to regard him as of strumous habit. His son, it may be mentioned, died of phthisis. His illness commenced slowly and

insidiously, with dropsical symptoms, till at length the general dropsy became so great that he was confined entirely to his bed or his easy chair. His face and eyelids were swollen and puffy. His lower limbs were hard and œdematous, and so great was the anasarca, that his thighs were swollen to the size of the body of a man of average bulk. His urine was frequently examined, and found to be highly coagulable, and of low specific gravity. It can be easily conceived that his distress in such a state must have been extreme. His symptoms went on from bad to worse, till I considered him in a very hopeless condition. When he was at the worst, he was seen by Dr. James Watson of this city, who regarded him as being in a very unfavorable state. He was also about this time visited by the late Dr. John Couper, professor of materia medica, who took a very hopeless view of his case. The treatment I adopted was the administration of mild diuretics, such as the acetate of squill and sweet spirit of nitre, the bitartrate of potass being given freely as a diet drink. He also had five grains of Dover's powders three times a-day, and an occasional warm bath. Latterly, the tincture of muriate of iron, with tonics, was found very beneficial. This treatment he followed most religiously during the time he was under my care—altogether about three months—and I had the satisfaction of seeing the graver symptoms very gradually subside; his health was slowly restored, and his recovery became complete and permanent. He was able to follow his occupation as before, and continued to do so till a few days before his death, which took place eight years afterwards. He never again suffered from any urinary or dropsical symptoms. I confess I was much surprised at this recovery, believing, as I then did, that albuminuria, presenting such symptoms as I have detailed above, was an incurable disease.

In May last (1859), I happened to be at Dunoon, and was requested to visit this person. His bowels had been obstructed for several days, and for twenty-four hours he had been in great distress from pain in the belly of a spasmodic character. He had a small inguinal hernia on the right side, for which he had long worn a truss. This had come down, but had been reduced by his medical attendant, Dr. Gemmell.

On examining him on the 17th of May, I found the whole abdomen soft and elastic, no part of it being more tender on pressure than another. The pain he described to be always present, of a dull character, and at intervals he suffered from severe paroxysms of pain of a more acute nature. The hernia had again come down, but it felt soft and elastic, and was easily replaced. I applied his truss, and directed him to keep it on. This he did at the time; but as the truss was an old one, and fitted badly, he soon took it off again, on account of the uneasiness it gave him. His pulse was eighty, of good strength; skin cool. There was no symptom of inflammation of the bowels. He had been taking pills containing calomel and extract of hyoscyamus, and several doses of laudanum had been administered; also, several large enemata had been thrown into the bowels. Having seen him recover under exactly similar circumstances a few years ago, I gave a favorable opinion of his case, thinking that as yet no symptoms of special danger had manifested themselves. Another opiate was administered.

At three a.m. of the 18th, I was again called to see him, his friends thinking he was weaker and sinking. I, however, found his symptoms unchanged; his pulse was still eighty, of good strength. I administered a very large enema of tepid water, with thirty drops of laudanum, through a long tube, which was introduced at least eighteen inches up the gut. I had some little difficulty in doing this, however, as the bowel felt narrow and contracted. The tube, when withdrawn, did not exhibit on its surface the slightest appear-

ance of fæcal matter. Two very small scybalæ were brought away, but there was no proper motion of the bowels.

At eleven a.m. I found him much weaker; in fact, he had then begun to sink. Some vomiting had taken place. The matter vomited was thin, yellow, and stercoraceous-looking, with a very fæcal odour. It was, however, very scanty, and the quantity never afterwards increased. Stimulants were now very freely given, and beef-tea enemata, &c., and continued during all that day and the following night; but all proved unavailing. He gradually sunk and died exhausted, on the 19th, about noon. I saw him half an hour before his death. He was perfectly sensible to the last, and did not exhibit any symptoms of urinary disease throughout his illness, nor was there any comatose tendency at the last. His age at death was 65 years.

The view I took of this case was, that the hernia had nothing to do with the symptoms. I considered either that there was an obstruction at some other part of the bowels, or that their obstinacy arose from palsy of their peristaltic action.

Autopsy on the 20th, at two p.m.—On opening the abdomen, a small quantity of reddish serum was found in the cavity of the peritoneum, but there were no traces of inflammation. The rectum and sigmoid flexure of the colon were very much contracted indeed, and perfectly empty. On slitting them open, they were observed in some parts to be as narrow as the little finger. The colon and caput cæcum were both very small, blanched, and full of flatus. The vermiform process adhered to the cæcum by old adhesions. The jejunum and ilium were blanched, and filled with thin, yellowish, feculent matter; there might be in all about half a gallon of it, and it was similar to what, in small quantity, was vomited during life. This liquid could be felt and heard gurgling in the belly, both during life and before the body was opened. No strangulation or complete closure of the bowels could anywhere be detected. The ilium lying immediately in contact with the right inguinal ring, was dark-coloured and congested for about a foot in length; a small triangular corner of it fell out of the internal ring when the integuments were raised. It seemed merely to have been forced into it by a little flatus, the bowel at this part being quite empty. This dark congested part was softened and thinned, and on stripping off the mucous coat displayed exactly the appearance of ecchymosis between the mucous and serous coats, and gave me quite the impression, that had life been prolonged it would soon have sphacelated. The hernia had been perfectly reduced. The mesentery presented numerous minute ecchymotic patches, some of them the size of a split pea.

The right kidney was small, and in some parts deeply notched, its envelope being puckered in many places. The cortical part of it, on a section being made, was found very much narrowed and thinned. The tubular tufts were, some of them, very healthy-looking; others were much encroached upon by granular matter. The granules appeared to me much less in size and more compressed than as seen in ordinary cases of granular kidney, and as if a process of atrophy had been going on in them. Indeed, the whole kidney appeared to have become atrophied, although in this man's body all the viscera were found unusually small.

The left kidney could nowhere be found in its usual situation, but after diligent search, was discovered lying on the sacrum, exactly in the fork formed by the bifurcation of the aorta. It was very much smaller than the right, having undergone much atrophy; it was nearly circular in form, presented the same notched and puckered appearance externally as the right, but contained more granular matter, of the same atrophied, compressed character as in the other. Both kidneys conveyed to my mind quite the impression that they had undergone a process of repair.

The liver and spleen were both much smaller than usual, but healthy in structure.

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 66.—*On the forms and stages of Bright's disease of the Kidney, with especial reference to Diagnosis and Prognosis.* (Fourth Communication). By Dr. GEORGE JOHNSON, Physician to King's College Hospital.

(*Proc. of the R. Med. and Chir. Soc.*, March 22, 1859.)

The author considers that the *oneness* of Bright's disease is inconsistent with the clinical history and the morbid anatomy of the kidney in its various conditions. A large Bright's kidney usually remains large to the end, and a contracted Bright's kidney has not passed through a previous stage of enlargement. The chief points of distinction between the large white Bright's kidney and the contracted kidney are the following:

1. The urine secreted by the large kidney is less abundant, of higher density, more constantly and copiously albuminous, and contains small waxy casts with or without oil, but not the granular casts which are thrown off from the tubes of the contracting kidney.

2. The minute anatomy of the two kidneys is different. In the contracting kidney, the gland-cells become disintegrated and washed away, leaving the tubes denuded. In the large white kidney, the cells for the most part remain attached to the basement membrane, and undergo changes varying from a slight granular opacity to a complete oily degeneration, or they may at length become replaced by an albuminous or a fibrinous material which fills and obstructs the tubes.

3. Another important distinction between the two forms of disease consists in the relative frequency of dropsy as a symptom. There are few exceptions to the rule, that patients who die with a large Bright's kidney have had dropsy. In only two out of twenty-six fatal cases in the author's experience had dropsy been wanting at some period of the patient's history; whereas, of thirty-three fatal cases of contracted kidney, there had been dropsy in only fourteen, and in most of these cases the dropsy was very slight and partial.

The author remarked that if all the contracted Bright's kidneys have passed through a previous stage of enlargement, it is difficult to understand how the majority of those patients who have reached this final stage of renal degeneration can escape the dropsy which, in a greater or less degree, troubles nearly all those who die in what is by some writers assumed to be an earlier stage of the same disease. The rule is, that a large Bright's kidney remains so to the end, and that a contracted kidney has not previously been enlarged. But there are exceptions to this rule. There are cases of Bright's disease in which the kidneys, having become enlarged, subsequently undergo a process of contraction in a greater or less degree. These cases, however, are so exceptional in many of their most important features, that they

afford a remarkable confirmation of the doctrine, that in ordinary cases the contracted Bright's kidney is not an advanced stage of a previously enlarged kidney, but the result of a distinct series of morbid changes. The cases in which contraction of the kidney has followed upon enlargement may be divided into three classes: 1st. There are cases in which the weight and size of the kidney are found to be increased after death; yet in the cortical portion of the gland there are unquestionable indications of commencing atrophy and contraction. The author said he had met with six cases of this kind, and showed a drawing of the kidney from one case. The gland was large, pale, and waxy, but the cortical portion decidedly wasted. In the second class of cases, the contraction of a pale, waxy kidney had proceeded farther, so that the size and weight were reduced below the average of the healthy gland. The third class of cases are those in which a kidney, having become enlarged and *fatty*, has subsequently contracted; the fat granulations being still visible in the atrophied kidney. During a period of fourteen years the author has met with only five examples of contracted fat kidney. In two of these cases the period of transition from a large fat kidney to a contracting kidney was clearly indicated by the microscopic characters of the urine. The large waxy and granular casts were observed to take the place of the small waxy and oily casts which had been present during the earlier periods of the disease. One of these cases was under observation for a period of ten years. The chief points of distinction between a kidney which has been wasted by the chronic desquamative disease and one which has contracted after waxy enlargement were referred to, and illustrated by drawings of the two forms of disease.

Art. 67.—*Cases of Diabetes.*
By Dr. Camplin.

(*Medical Times and Gazette*, May 28, 1859.)

The following cases furnish confirmatory evidence in favour of the view set forth by Dr. Camplin, in his work on 'Diabetes and its Successful Treatment.'—(Abstract xxviii, 351.)

Case 1.—August, 1858, Mrs. ——, æt. 44, the mother of several children, rather a large woman, although she says that she has lost two stones in weight; supposes that her complaint has been brought on by anxiety; has latterly been subject to headaches and palpitations; skin very moist; says that she sweats profusely; has lost her appetite; has constant thirst; her lips stick together; and that she is so altered that a physician long acquainted with her, and who had seen her a few months before, did not recognise her when she called on him. Catamenia regular; bowels confined.

Her case was described by the physician (Dr. Forsyth, of Londonderry) who kindly recommended her to my care, as follows: "She complained chiefly of debility and loss of flesh, and I had not much trouble in tracing these symptoms to a diabetic origin. I found the sp. gr. of the urine 1·040, liq. potassæ turning the sample to a claret colour. About eight pints were passed in the twenty-four hours."

When I first saw her, the diabetic symptoms thus described were rather

aggravated than otherwise, the liq. potassæ rendering the urine extremely dark.

I prescribed—

℞ Acid. sulph. dilvt. ℥iij.; liq. gent. compos. ℥iiss. M. cap. coch. parv. ter die ex aquæ cyatho.

℞ Aloes barb. ext. Saponis, āā xxiv.; pulv. ipecac. gr. iv.; ext. nucis vom. gr. iij. M. et div. in pil. xij. cap. j. vel plures h. s. ut opus f.; and enjoined a diet of bran cake, meat, and a free use of vegetables.

Aug. 31.—Urine diminished to four pints, and now only brown, with liq. potass.; thirst nearly gone, and in every respect better.

Sept. 15.—The sample of urine sent up for inspection contained scarcely a trace of sugar; the sp. gr. 1·015 (quantity not mentioned); and it was difficult to believe that it could be from the same person.

Nov. 1.—I received a note, stating that she had quite recovered; and on April 19 of this year her husband writes: "I am happy to say that Mrs. —— is now quite well: she has resumed her usual diet long since."

Case 2.—Dec., 1856, —— Esq., upwards of 70, attributes his attack to late hours in Parliament, which had been "too much for him at his advanced time of life."

The general health of this patient was not so much lowered as might have been expected, the disease having existed some months; but his son (an eminent surgeon) considered him now fast declining: he complained much of weakness in the limbs, and had a little puffiness on the tibia; had taken gallic acid and other remedies by the advice of his medical attendant in the country, and had also been put on a partially restricted diet; the quantity of urine was now about 80 oz., the sp. gr. not much above 1·030, but it contained a considerable quantity of sugar.

I prescribed—℞ Ammon. sesquicarb. ℈ij.; infus. aur. co. ℥viij. m.f. cap. coch. ij. ter die; and directed a more rigid diet, with a little brandy and water instead of wine.

This prescription was occasionally varied, with ammonia as the general basis, and he took from time to time, small doses of pil. hydr. and pulv. ipecac. compos. and gradually recovered.

Aug. 5, 1857.—He writes, "I am glad to be able to say that for some months past I have been in excellent health, and my friends tell me I look as well as I ever did."

July 21, 1858.—I had a note from his son, who says: "He has latterly been well in health, and when I last examined the urine, no sugar could be detected, but there was a large amount of lithates. He lives pretty much as usual, temperately always as regards alcoholic liquors, but does not eat much bread—the bran cake his servants managed very well,* and he takes it occasionally: he has lately suffered the operation of reclination on a cataract in his right eye, and the result, I am thankful to say, seems likely to be satisfactory."

On a recent occasion, when I accidentally met this gentleman, I had the satisfaction of hearing that my patient, though in his 78th year and feeble, had not required any restriction in diet for eighteen months or more.

Case 3.—The Rev. Mr. ——, nearly 64. Sept., 1857.—The history of this case, written by himself, is exceedingly graphic; and only the fear of occupying too much of your valuable space prevents me from transcribing it

* Several of my patients have succeeded equally well in the manufacture of the cakes—others have preferred purchasing the bran biscuits. When the bran cakes have been found unpalatable, or have turned moist in the centre, or rapidly changed, it has arisen from some fault in the preparation, or more commonly in the baking.

at length. The disease had been slowly undermining his system several months, and having been in the habit for some years of resorting to a hydropathic establishment when out of health, he had recourse to that in the first instance. Contrary to what had been usual with him, instead of recovering strength, he continued to get weaker, and the nature of his disease not being ascertained, the proprietor considered him nervous, and recommended him to go to the seaside. After remaining there some weeks, still losing ground, he came to consult an eminent Physician in town, who discovered the nature of his case, prescribed for him, and put him on a partially restricted diet. When he placed himself under my care, he was somewhat better, but highly nervous and dyspeptic, the urine still abnormal in quantity, and containing sugar. I advised that the diet should be still farther restricted—that he should have weak brandy and water instead of claret. Substituted ext. humuli at night for the opiate, as he was too wakeful to do without anything, and prescribed the following mixture: ℞ Magnes. carbon. ʒiv.; pulv. acaciæ 3ij.; sp. ammon. arom. 3ij.; infus. gent. compos. ad ℥viij. m. f. mist. I find this prescription occasionally varied as Dec. 16. ℞ Potass. bicarbon. 3iij. ʒj.; magnes. carbon. ʒiv.; pulv. acaciæ 3ij.; tinct. hyoscy. 3j.; infus. calumbæ, ad ℥viii. m. f. mist. cap. coch. ij. ter die. At one time small doses of tinct. nucis vom. were ordered to the alkaline mixture, but soon laid aside again; he gradually recovered and resumed his clerical duties, which he had long been incapable of performing.

June, 1858.—He writes: "I am now gradually returning to ordinary diet. I substitute brown bread for the bran cake. I have now more fear of lithic acid than of sugar."

March 23, 1859.—"I have no return of diabetes, and am decidedly stouter, and more vigorous. Now take three glasses of port wine daily, two at dinner, one mulled at night, or at 8 o'clock in the evening; brown bread and greens, meat three times a-day, but not much."

Case 4.—August, 1858, — ——, Esq., Banker, aged upwards of 60, consulted Dr. Babington, who prescribed for him, and kindly recommended him to me for instructions as to diet. Dr. Babington's prescription was five grains of ammon. sesq. in infus. gent. c. three times a-day. Writing to me shortly after, this patient says: "It is quite astonishing how little water I part with in comparison—it was immediate when I paid strict attention to diet."

I had not heard of this gentleman for many months—in answer to an inquiry as to his state, he writes (April 23, 1859): "I do not make more than one quart per day; sometimes there is a little red sediment at the bottom. I sleep well, and eat well."

"The above, adds Dr. Camplin, are specimens of a few cases in which a return to the ordinary diet has been practicable: in the majority the disposition to the formation of sugar has appeared too strong to render this advisable; and I have thought it better for the patient to be satisfied with comparative health and comfort, with the diabetic diet, than to run the risk of a relapse, particularly where, from the distance and other circumstances, I could not examine the urine from time to time.

"The remedies prescribed in the above cases were in the first acid, in the others alkaline, in each the indications seemed obvious, and the result was most satisfactory. In cases now under my care (especially five or six from 30 to 35 years of age), I am testing the value of various remedies, and hope by classifying them, as much as practicable, to obtain definite results.

"In conclusion, I would only remark that of upwards of twenty cases lately, more or less under my surveillance, I have only seen one fatal, and that in a gentleman who had long had phthisis, and was unable to rise from his bed when I saw him: two others have been unsatisfactory, as from various causes I have lost sight of them; in all the rest the disease has been kept in check, if not entirely removed."

Art. 68.—*On the relation of Diabetes to affections of the Brain.* By Dr. E. Fritz.

(*Gaz. Hebd. de Méd. et Chir.*, No. 17, 19, 22, and 24, 1859.)

With great diligence Dr. Fritz collects together cases of disease or injury to the brain in which the condition of the urine was carefully noted. These cases are twenty-four in number. The conclusions to which they lead are:

1. That diabetes may be an effect or symptom of certain affections of the brain, and that the urine under these circumstances may sometimes be only increased in quantity, without containing any sugar.
2. That we do not know anything of the particular seat or character of the cerebral injuries which determine the presence of sugar in the urine.
3. That diabetes may be connected with functional as well as with organic disturbance of the cerebro-spinal nervous centres.
4. That the symptoms of diabetes depending upon cerebral disturbance do not differ materially from those of ordinary diabetes, but that they differ rather in their transitoriness, and in tending usually to a favorable termination.

(f) Concerning the Cutaneous System.

Art. 69.—*Epidemic Sudamina in a family of eight persons.* By Dr. George D. Gibb, Physician-Accoucheur to the St. Pancras Royal Dispensary.

(*Lancet*, July 30, 1859.)

In hot climates, great heat of the skin, with inordinate sweating, are sometimes followed by an extensive eruption of sudamina, which may affect several individuals of a family. The eruption of small vesicles, filled with an almost colourless fluid, may come and go for several days, finally subside, and a recovery ensue, with no greater inconvenience than tenderness and slight irritation of the skin for a short time afterwards. The same causes that produce the eruption in a single member of a family, are likely to influence the remainder; and hence it may actually be epidemic in a family without its necessarily extending to other persons.

At the St. Pancras Royal Dispensary, a mother brought to Dr. Gibb her child, two years and nine months old, covered over the head, the neck, and the face with a distinct and well-marked sudaminal eruption, the small vesicles being as large as millet seeds, surrounded

by a red base, and accompanied by profuse sweating. This eruption had commenced six days before, and had disappeared and become renewed several times; and now isolated groups of the vesicles were appearing on other parts of the body, and in some places (as between all the fingers and on the back of the hands) solitary vesicles showed themselves. The child was cross and fractious, and no doubt suffered from the well-known pricking and tingling sensation so characteristic of miliaria. On looking from the child to the mother, she was found to be suffering from the same thing, but in a milder degree, the eruption being confined to the face and the flexures of the arms. Her other children, six in number, were likewise all, though variously, affected by it; thus, in some the eruption was chiefly confined to the face, head, and neck; in others to the limbs; and in one it seemed to be associated with boils over the hip, rendering her for the time lame.

The cause of the eruption would seem to have been the extreme heat. In the words of the mother, they had all been "overwhelmed with perspiration, actually dripping with it."

Art. 70.—*On Factitious Urticaria.*

By Dr. Gull, Physician to Guy's Hospital, &c.

(*Guy's Hospital Reports*, 3d series, vol. v, 1859.)

Wilian describes a form of urticaria which shows itself when the skin is rubbed. "It may," he says, "be excited on any part of the body, in a few seconds, by strong friction or scratching, but the wheals presently subsided again." It is included by this author in "urticaria evanida," because the wheals are transient; nor does he distinguish it from the ordinary chronic urticaria, with wheals arising spontaneously. It is this distinction which the term "factitious" is intended to mark, for the malady thus named (when it amounts to a malady) is not associated with common urticaria, the skin having its natural appearance in the cases Dr. Gull has seen, unless rubbed by the dress or otherwise, or stretched by the use of the muscles in violent exertion. The patients were not liable to the eruption of any wheals but such as had this mechanical origin. Any form of wheal in these cases could be determined by the direction and extent of friction on the skin, and if with a blunt point any figure or letter was traced it quickly came into relief with great sharpness of outline.

The effect is greatest where the skin is well supplied with muscular fibre-cells, and hence on the volar surface of the thumb it is scarcely produced.

This susceptibility of the skin is common, in a greater or less degree, to all persons, and can be termed morbid only when extreme. In the first patient in whom Dr. Gull noticed it, it was the source of great inconvenience, for if the skin was handled roughly, as in wiping the face with a towel or in pulling on the socks, it would quickly become swollen and stiff with wheals. This susceptibility may be hereditary. It was so in the case of the gentleman who afforded his arm for the sketch. His father's skin was equally irritable. In four other cases

which the author has seen, this tendency in the skin came on gradually, without any assignable cause. In one only was there any recognisable disturbance of the general health, and that was in a youth of fifteen, who was liable to attacks of spasmodic asthma, which seemed to be associated with the state of the skin.

When it was found that a wheal of any shape could be made upon the healthy skin, it suggested a more minute inquiry into the nature of a wheal, and the conclusion arrived at was, that wheals are principally due to contraction of the muscular tissues of the skin. If a line be traced with slight force on a skin which is prone to this form of contraction the first noticeable change is a wrinkling of the surface, as in "cutis anserina." In forty seconds there is a slightly raised red line; in sixty seconds the line is palpably raised and hard; in ninety seconds there is an obvious wheal, which becomes fully developed in three minutes. If a large space be rubbed there is a sensation of tightness and stiffness, as if the part were hide-bound. If two points be marked on the skin previous to the friction, they are found nearer together after the wheal has risen. With the rising of the wheal, which is white and firm, there is an accompanying areola of capillary hyperæmia, which, after some minutes (fifteen or twenty-five), disappears, leaving the wheal for a longer time persistent.

If, as here suggested, a wheal be due to muscular contraction, we should, *à priori*, expect its formation and duration to be modified by whatever influences the activity of the involuntary muscular fibre, and such is the result of experiment. After dropping chloroform on the skin, however susceptible it might have been before, no wheal could be brought out by friction, and when chloroform was applied to a wheal already risen it quickly reduced it. When ice was applied to the part immediately after friction, a wheal did not rise. By stretching the skin the wheal could be obliterated, apparently by overcoming the contraction of the muscular tissue. These facts are elucidated by a collateral experiment. If the stomach and intestines of a cat or dog, immediately after death, be exposed, imperfect wheals (but essentially wheals) may be formed upon them by passing a point sharply over their surface. These are plainly the result of muscular contraction.

When we consider the rapidity with which the eruption forms, its noticeable graduations through cutis anserina, the hardness and sharpness of its outline, the conditions which modify it, and the parts of the surface where it is most readily excited, and its non-occurrence on others, the conclusion above stated seems irrefragable.

How a wheal is excited in ordinary urticaria, whether directly by the circulation of some irritating substance through the cutaneous tissues, or indirectly by reflection through the vaso-motor nerves, or indifferently by both modes, is not proved. Admitting that the blood is the more common channel, there are still many clinical facts, as well as the proofs given above, which show that it is not the exclusive one. It is well known that exciting or depressing emotions will favour the eruption, and sometimes it seems to be caused by merely thinking of it. We are so much in the habit of viewing these phenomena as evidence of the elimination of a *materies morbi*, as an "effort of nature"

to throw off what is offensive, that we are prone to overlook all other modes of action.

ART. 71.—*Great pigment deposit in the Skin without disease of Supra-renal Capsules.* By Dr. PARKES, Physician to University College Hospital, &c.

(*Medical Times and Gazette*, Dec. 11, 1858.)

CASE.—William Barker, æt. 66, a cabman, of extremely intemperate habits, was admitted into University College Hospital on October 7, 1858, with ascites, dependent on contracted liver. He was a fine strong-built man, and in spite of exposure to weather and of his habits, had had remarkable good health. The only illness he could recall to mind was an attack of jaundice seven years before, for which he was treated in University College Hospital for five weeks. He left the hospital apparently well. Some time afterwards (four or five months) he noticed that some parts of his skin (which before had been of healthy colour) were gradually becoming darker, especially the skin of the face and neck; he then noticed dark patches on the body, and on the arms and thighs, and these increased until a very considerable part of the whole body had assumed a very dark hue. Those portions of the skin which did not become dark became, he thought, even whiter than before. This discoloration advanced very gradually and continually for several months; he was not quite clear how long; sometimes saying that it was about six months, and at other times that it was a year or even eighteen months. But it seems clear that after a certain time the darkening process stopped, and since that time, now certainly five years, if not more, the skin remained unaltered, and presented the same characters as when he was admitted into hospital in 1858. During this change of colour he appears to have had good health; he continued to follow his occupation, and to drink as before from half to three quarters of a pint of gin daily. There seems to have been no general weakness, impairment of nutrition, or anæmia, until about four months before death.

In the summer of 1858 he began to feel ill and weak, and to lose his appetite, and in August he observed that the abdomen had swollen.

When admitted in October he presented a very singular appearance, from the extreme darkening of great part of the skin. The epithets "bronzed skin," or "mulatto skin," might perhaps be applied to it, and certainly would not exaggerate its intensity. The dark tint was uniform, or with slight variations of tint over the face, neck, shoulders, and arms; but over the trunk, and especially over the abdomen, it was diversified with irregular white patches, varying in size from one to four inches in diameter. It was uncertain whether these patches were whiter than natural. The scrotum gave the best example both of the dark colour and of the white patches. Over the upper part of the thighs the skin was also dark, with some small white patches; towards the knees the dark colour lessened, and below the knees the skin looked of a natural tint. The skin had its ordinary elasticity and sensibility. There was a little pigment on the conjunctiva, and a dark patch on the mucous membrane of the lips.

The conjunctivæ were also slightly yellow, and the urine contained a small quantity of bile pigment; but the discoloration of the skin was not like that of Melas Icterus, to say nothing of the white patches being altogether opposed to the hypothesis that the dark tint could be attributed to bile pigment.

In other respects the patient presented the usual symptoms of contracted liver with ascites, and with very scanty and deeply pigmented (red and pink) non-albuminous urine. The lungs were healthy; the arteries at the wrist rigid; the heart was pushed up by the ascites, and there were extremely faint obstructive and regurgitant murmurs over the aortic valves. The nervous system was unaffected.

Paracentesis was employed, and eighteen pints of fluid drawn off; but the fluid collected again very rapidly; and in spite of various remedies the patient sank and died on the 10th of November. During life the blood was examined microscopically by Dr. Harley, who found no excess of white corpuscles, and no free pigment; the red corpuscles were "large, flabby, and dingy-looking;" blood crystals could not be obtained.

This patient had been regarded with much interest during life, as it was supposed to be a marked case of Morbus Addisonii. After death the microscopic characters of the skin were found by Dr. Harley to correspond with those which have been previously noticed in cases of the so-called bronzed skin; there was, namely, great pigment deposits in the rete-mucosum. There was also pigment deposit beneath the epithelium of the peritoneum, forming several black patches. The supra-renal capsules were perfectly healthy, both in size, shape, makroscopic and microscopic characters. I requested Dr. Harley to examine them, and annex his report.

"*Right supra-renal Capsules.*—Normal in colour; of healthy consistence; of usual size and shape; measures $2\frac{1}{4}$ inches in its longest diameter; $1\frac{1}{4}$ in height; $\frac{1}{4}$ at the thickest part. On section the medullary substance is beautifully well marked, of the healthy slate colour, and firm consistence; no large cavity in it; no grumous matter; rows of small sinuses, distinct, full of healthy-looking blood; cortical portion well defined, running all round the medullary in a well-marked yellow ring; looks perfectly healthy."

"*Left Capsules.*—Normal in colour, size, shape and consistence; measures $2\frac{3}{5}$ of an inch in longest diameter; $1\frac{1}{4}$ high. On section the medullary as well as the cortical substance appears perfectly healthy. Examined with the microscope, the columnar cell-masses of the cortical substance are beautifully seen; the medullary cellular matter was equally distinct; not the remotest trace of disease could be detected in either capsule."

I should mention that the capsules and a portion of the skin were modelled in wax by Mr. Tuson; and these models, as well as the capsules themselves, and a piece of skin preserved in spirit, are deposited in the museum of University College, and can be seen by any one. Dr. Harley also has made drawings of the microscopic appearance of the skin and capsules.

I need not detail the condition of the other organs at length; the liver weighed thirty-four ounces, and presented a fine example of the contracted hobnail, or granular liver; the spleen weighed $14\frac{1}{2}$ ounces, its capsule was uniformly thickened, to the amount of about a quarter of an inch; on section it was firm, not evidently hæmorrhagic, and without apparent enlargement of the Malpighian bodies; it was not examined microscopically. The kidneys $4\frac{1}{2}$ ounces each; they seemed healthy to the eye; on microscopic examination they were found to contain perhaps a slight excess of fibrous tissue, but the tubes and epithelium were quite healthy.

The facts which may be taken as certain in this case, are the existence of extensive pigment deposit in the rete-mucosum of the skin, without the slightest trace of disease of the supra-renal capsules. Whether the disease is to be received as an example of the Morbus Addisonii, and if so, whether it is sufficient to destroy the doctrine of the supposed necessary coincidence between pigment darkening of the skin and disease of the supra-renal capsules,

are points in which the readers of this journal will judge for themselves. For my own part, I can see no distinction between the skin affection in this case and in those cases recorded as examples of the Morbus Addisonii, in which the skin has been microscopically examined. The anatomical condition of the skin was the same; the depth of colour, though great, was merely dependent on a high degree of the anatomical condition (viz. pigment deposit) and the fact that some patches of skin were devoid of colour, is pointedly described by Dr. Addison as occurring in some of his patients. I therefore can come to no other conclusion than that this case shatters the doctrine of the necessary connexion between this peculiar state of the skin and disease of the supra-renal capsules. It is true, however, that there was no anæmia, nor any of those grave but obscure constitutional symptoms of weakness and general failure, which are described so carefully and emphatically by that eminent physician; and, therefore, this case proves or disproves nothing as to the connexion between disease of the supra-renal capsules and grave anæmia with or without pigment changes in the skin.

Art. 72.—*Complete disorganization of both Supra-renal Capsules without discoloration of the Skin.* By Mr. Norris F. Davey.

(*Medical Times and Gazette*, Jan. 8, 1859.)

Dr. Parkes's case related in our last article shows that there may be great bronzing of the skin without disease of the supra-renal capsules. This case shows that the capsules may be completely destroyed and the skin remain of marble whiteness.

Case.—R. A. æt. 18½ years, a servant-girl, reputed to be healthy, was confined, December 22, 1857, of a child at the full period, and died rather unexpectedly two days afterwards.

Sectio Cadaveris, December 30.—Body fat, of uniform marble whiteness; no putrefaction. Legs œdematous. Three quarters of an inch of subcutaneous fat. *Thorax.*—Four ounces of serum in pericardium. Heart enlarged, pale; fatty degeneration of muscular substance. Both ventricles dilated and hypertrophied, the left very much so; both full of fibrinous clots. Valves healthy. Auricles: right dilated; left natural. Pleural cavities containing each about a pint of serum. Lungs pale, collapsed, gray; posterior lobes infiltrated with serum; otherwise healthy. Abdomen containing three or four pints of serum. Omentum, etc., very fat. Stomach quite healthy. Liver enlarged, pale; its convexity indented by the enlarged heart, fatty, containing much serum. Small intestines and colon healthy. Pancreas and spleen natural. Kidneys: left much enlarged, fatty; right less so. *Supra-renal Capsules.*—Left, large, dark gray in colour externally; no trace of natural structure on section; its contents consisted wholly of dark reddish-brown, soft matter, mixed with yellowish, cheesy masses. Right, very small, pink, semi-transparent, and gelatinous in appearance, both without and within. They were preserved for microscopic examination. Uterus pale, firm, natural in appearance on section; point of attachment of placenta seen at fundus. Ovaries and bladder healthy. Head not examined.

Upon examining the supra-renal capsules under the microscope with a good ¼, and also with a Ross's ⅛, I could find no trace of the normal cell structure, the left consisting of dark amorphous matter mixed with abundant oil-globules; the right almost entirely of fatty matter.

ART. 73.—*On a Pruriginous Affection transmissible from poultry to the horse and to man.* By Dr. ———.

(*Rév. Méd.*, July, 1859; and *Dublin Hosp. Gaz.*, Sept. 15, 1859.)

This affection in birds presents the remarkable and novel feature of being transmissible to man and other animals, and it is caused by the presence of an arachnid, of the genus Sarcoptes, distinguished by M. Ch. Robin as "Sarcoptes Mutans." It is most commonly observed upon the claws, the comb, and around the bird's beak, and has seldom any obvious antecedent symptoms. It first appears in the form of white points and zig-zag lines, at the base of the comb. These are covered by very fine epidermal scales, which readily fall off; and the skin underneath is noticed to have a brown hue, which contrasts strikingly with the red colour of the rest of the comb. After a period of from fifteen days to a month the affected part becomes thickened and darker coloured, the lines occupy a more extended surface, and resembles the ridges noticed in common itch; and at the termination of these lines the new described insect is found. Under the scaly diseased epiderm small granulations form, resembling little reddish-brown papules, which thicken the comb, and render its tissues hard. At a more advanced stage, the feathers at the top of the head and around the beak become greatly altered, lose their brilliancy, turn white, are atrophied, and surrounded at their lower parts by thickened epidermal scales; they are finally lost, by their free ends curling up and disappearing in the accumulated epiderm and new secretion, which form a crust around them. At this stage the head and upper part of the neck of the fowl present a very peculiar aspect: the feathers have fallen, the comb is brown, its surface knobbed, its base thickened, and it is covered by white scaly crusts, which, when detached, leave surfaces resembling that of pityriasis.

The affection, instead of appearing, as described, on the head, may attack the claws. At first there is a whitish and powdery appearance noticed between the toes, afterwards this increases greatly in quantity, and forms evident crusts. The birds do not appear to suffer much as yet in health, and the disease may remain very stationary for a month or two; but at last it slowly progresses; the scales fall off, and in their stead a concrete greyish exudation forms, which finally assumes the appearance of grains as large as a nut, and covers both the toes and legs. In this concrete matter great numbers of the new insect described are to be always found.

When once developed, the disease rapidly propagates by contagion, and this has been proved by direct experiment. For this purpose, contact with previously infected fowl is not even necessary — it is sufficient to keep birds as yet healthy for a time in the place where those already affected have been living.

Veterinary surgeons have been long familiar with the fact that horses in farm-yards along with hens or pigeons, are liable to acquire a pruriginous disease which they call, from its origin, "Phthyriasis of fowl." M. H. Bouley has published a full description of this affection,

which is well known, but of which the origin, although ascribed to a parasitic disease which extended from the bird to the horse, was not recognised until the Sarcoptes Mutans was discovered and described. To demonstrate a connexion between this cause and the phthyriasis of the horse, the parasite from the fowl has been placed on the skin of the latter animal, and a violent pruriginous disease thereby produced, having all the characters of the well-known disease as it occurs in horses who have contracted the affection by living in fowl-yards.

The transmissibility of the insect to the human skin has been proved by direct experiment; and the writer states, that "amongst girls in farm yards he has often noticed both the arms and legs attacked by an eruption which they mistook for common itch, but which he ascribes to this new sarcoptes."

Note by Translator.—Unfortunately, all scientific description is wanting, and we are quite ignorant what difference, if any, exists between this new insect and the well-known one found in many cases of common itch, if not in all; but it is fair to state, that the necessary connexion of itch and the sarcoptes insect, although usually admitted, and often asserted, is by no means yet proven in a satisfactory manner. One remarkable fact in itch is not yet accounted for—namely, why, if caused by an insect such as the sarcoptes, it so rarely occurs a second time in the same subject. The translator of this notice collected the histories of upwards of one hundred cases of itch, and in none was there ever a single instance of recurrence. If the sarcoptes, or any insect, were the entire cause, this fact would, so far from being anything like a rule, be the exception. Again, the number of insects and of itch-spots do not seem at all proportional — a fact that has been often noticed.

In conclusion the translator would refer to Mead's Medical Works, for what appears to have been the original description of the itch insect, there fully described by Dr. Bonomi, an Italian—an *honour* which has since been contested by more modern describers, who have quite forgotten Bonomi's claims.

Art. 74.—*On Amyloid Corpuscles as natural productions on the Surface of the Skin.* By M. L. Luys.

(*Gaz. Méd. de Paris*, No. 1, 1859; *North Amer. Med.-Chir. Rev.*, July, 1859.)

In October, 1853, Virchow pointed out to the *Académie de Sciences*, of Paris, the existence of a particular substance in the human body, giving rise to the same chemical reactions as vegetable cellulose. This discovery was confirmed by Carter, of Edinburgh, (1855 and 1858,) and the result of the researches of these two observers was, that amyloid corpuscles were found in nearly all histological tissues. Virchow considered this substance a degeneration, a pathological condition. Carter, on the contrary, believed it to be a normal production, connected with the regular exercise of physiological phenomena. It is interesting to compare these investigations with the discoveries made by M. Cl. Bernard in regard to the sugar-forming substance, and to trace thus an additional resemblance between the phenomena which

take place in the animal economy, and those which are observed in the vegetable organism.

In a memoir read before the *Société de Biologie*, M. Luys has endeavoured to prove—1, That the skin is endowed, in its physiological and pathological condition, as all other tissues of the organism, with the property of producing amyloid corpuscles. Carter pointed out their existence only in certain cases of ichthyosis, in the deep layers of the dermis, and consequently believed that their presence in these cases was owing to a morbid state. 2, That these corpuscles present the reactions of amyloid substances.

The amyloid corpuscles are obtained by scraping the surface of the moistened skin with the back of a scalpel. They are more abundant on the nape of the neck, and on the scalp, than anywhere else. The epithelial lamellæ, which the comb or brush removes, are literally covered with a great quantity of these very corpuscles. The author has convinced himself, by careful experiments, that they came neither from the dust suspended in the atmosphere, nor from the starched linen worn on the body. The fact that amyloid corpuscles exist on the surface of the skin of the fœtus, at the moment when it leaves the uterine cavity, can be considered decisive. The corpuscles derived from this source have served to establish the typical characters.

The amyloid corpuscles are numerous; their dimensions vary from the hundredth to the four hundredth of a millimètre; transparent, pale, of disk-like form, resembling that of a ship buscuit, depressed in the centre, and appearing, consequently, slightly biconcave; homogeneous, of even fracture, and containing no cavity.

M. Luys has found them to possess the following chemical characters, which have been confirmed by the researches of M. Berthelot:—

They are insoluble in cold water, ether, in absolute alcohol, either cold or on heating, in spirits of turpentine, and in ammonia. After having been subjected to contact with these substances, they are always susceptible of being coloured by iodine. In a solution of potassa or soda they swell, and become paler. Iodine gives them instantaneously a dark violet, nearly black colour; on addition of sulphuric acid, the colour changes to a clear blue.

If corpuscles, thus darkened by iodine, are heated in a little water, they become paler as the heat of the liquid increases, and disappear entirely on ebullition; when the temperature afterwards decreases again, they reappear gradually with their primitive colour. If corpuscles, coloured by iodine, are subjected to the action of dry heat, they assume a sienna-red colour.

Although this substance, in the very small proportions in which it was obtained from the skin of the fœtus, has not yet given rise, in the hands of M. Luys, to the characteristic reactions of starchy matter, the formation of sugar, the author believes himself, nevertheless, authorised in saying that it approaches and presents the greatest analogies with vegetable starch.

The mode of formation, and the use of this amyloid substance, have not yet been ascertained, and demands further researches.

Art. 75.—*On Dracunculus in Bombay.* By Mr. H. J. Carter.

(*Trans. of Med. and Phys. Soc. of Bombay,* No. 4, new series, 1859.)

In this paper Mr. Carter adduces further evidence to show that the alimentary canal is of the same construction in the young and old *Dracunculus* as in many species (seventeen at least) of microscopic *Filariæ*, which abound in myriads in the salt water of the marshes and main-drain, in the fresh-water tanks, and in the gelatinous Algæ which abound in the neighbourhood of Bombay, in the rainy monsoon. He also shows that the ovisac of the adult *Dracunculus* is as symmetrical in its two halves as the double ovisac (so-called "uterus") of the microscopic species, but from want of a vaginal outlet, is a uniform continuous tube, the diminished extremities of which resemble the diminished extremities of the double ovisac, which are in fact the ovaries; that the bursting forth of the ovisac, therefore, in dracunculus, is an inevitable consequence, and has its parallel, according to Van Beneden, in the bursting forth of the "matrix," or so-called "uterus," under corresponding circumstances (that is when it becomes distended with ova) in the Cestoid Entozoa, *Tænia solium;* that the œsophagus in *Dracunculus* being of the same construction as that of the microscopic *Filariæ*, is therefore, probably provided with an exsertile point, which enables it to bore its way through the tissues, after the manner of *Cysticercus,* which is also similarly provided for this purpose; and that this might enable the young of the microscopic species to pass into the human body through the skin direct, or indirectly through the ducts of the sudorific glands, the latter being much larger in calibre (viz. 1-1200th of an inch) than the young *Filaridæ*, which are frequently not wider than a human blood-globule; that from what we now know of parthenogenesis or virgin-generation, the young female microscopic worm might pass into the body already prepared to produce a new brood before the generative organs can even be detected, as Mr. J. Lubbock has proved,* by showing that the ovaries of *Daphnia* may throw off a number of buds at one time, and a number of eggs at another, both of which may repeat the individual, but probably the latter only (which requires impregnation) can keep up the race; that some of the microscopic *Filariæ* above alluded to have two and four minute papillary eminences projecting from their heads respectively, two of which are larger than the other two, which approximates them still closer to *Dracunculus;* and lastly, that the microscopic *Filariæ* not only seek a habitat (viz. the gelatinous Algæ and decomposing cells of vegetable matter) where they can obtain nitrogenous food and elements of nutrition like those afforded by the human body, but that it has occurred to the author frequently to find a *Nais* (whose habitat also is the *Glæocapsa* during the rainy weather) with its peritoneal cavity containing one or more microscopic *Filariæ,* equal in size to those which are dwelling in the same Alga.

"It is true that we have not the means of feeding either man or animals with the young microscopic *Filariæ*, to determine if this

* 'Phil. Trans.,' 1837.

would be followed by the production of *Dracunculus*, as the abundance of *Cysticerci* in "measly pork" has enabled Küchenmeister, Van Beneden, Siebold, and others, to prove that the latter, when taken internally, are productive of *Tænia* or tape-worm; nor would this be likely to succeed, if we did possess such means, since it is more than probable that the embryo which produces *Dracunculus*, whatever it may be, enters through the surface of the body. Neither should we be justified in plastering mud over the human body to satisfy our curiosity in this respect, knowing the pain which *Dracunculus* occasions, while the experiment seems to be already performed to our hands, as related in my "Note" under reference, where it is shown that out of a school of fifty boys bathing and dabbling more or less throughout the day in a small pond in their enclosure, whose muddy sediment swarmed with the so-called "tank-worm," not less than twenty-one in one year had had *Dracunculus* in more or less plurality, while such was not only not the case in any of the other schools of the island, but in the school of which I have had medical charge for more than ten years, with an average number of 346 children present, only two or three cases have occurred during that time; and microscopic *Filariæ* do not exist, so far as I have been able to ascertain, in the sedimentary deposit of the tank in their enclosure, from which the children of this school are solely supplied with bathing water.

"I have only now to add, in support of the inference conveyed by the above remarks respecting the origin of *Dracunculus*, that Professor Siebold took the larvæ or caterpillars of *Yponomeuta cognatella* and other lepidopterous insects, and, having placed them in wet mould which abounded with the embryos of *Mermis albicans*, a worm closely allied to *Gordius*, found, in every instance, that after twenty-four hours the larvæ became more or less infected with these embryos, which had penetrated into their bodies; while the larvæ of *Yponomeuta* being transparent, enabled this sagacious observer to ascertain, by aid of the microscope, that they did not contain any of these embryos before the experiment of bringing the two into contact with each other was performed. Lespés also, while studying the *Termites*, found whole nests destroyed by the embryos of a nematoid worm, just like our microscopic *Filariæ*, penetrating their bodies and becoming developed in the peritoneal cavity, as in the instance above-mentioned in *Nais*. If, after this, the origin and mode of introduction of *Dracunculus* into the human body be doubted, I can only reply, that I shall be happy to see a better explanation of it. The facts above stated appear to me as conclusive as those of *Cysticercus* producing *Tænia* or tape-worm; and therefore it remains only to determine which of the microscopic *Filariæ* produces *Dracunculus* in Bombay,—a point which the marked forms of these worms respectively might be expected to render not difficult of demonstration. Indeed, it so happens that the so-called "tank-worm" (*Urolabes* palustris*, mihi), which I have taken from the "bathing-pool" of the school mentioned, as well as from other pools, tanks, and collections of dirty fresh water in the island generally, comes nearest to *Dracunculus*. The largest specimens are one sixth

* A holder on by the tail, which is the character common to all those microscopic *Filariæ*.

of an inch long, bilabiate, with an exsertile, sharp-pointed œsaphagus, the hepatic sheath ending some distance from the termination of the intestine; the vulva opens in the female a little in front of the middle of the body, and the anus posteriorly, just before the body terminates suddenly in a whip-like tail, which varies in length, being sometimes almost abortive and curved upon itself. The penis in the male is exsertile from the anus, *very nearly close* to the posterior extremity of the body, which is so obtuse, as to be almost truncated. The tail of the young is semi-geniculated at the base, and there is a gland close to the anus, as in the young *Dracunculus*."

Art. 76.—*On the use of White Paint in some cutaneous maladies.* By Mr. Alfred Freer.

(*Lancet*, June 18, 1859.)

"I first became acquainted," says Mr. Freer, "with the great efficacy of white paint in the treatment of erysipelas by seeing it used by my late father and by my brother. It is, indeed, in this disease that the most striking benefit results from its application. I have never yet met with a case of this nature where it has not done immense good. I find it far superior to lead lotions, mucilage, hot fomentations, nitrate of silver, or collodion. After erysipelas, the paint proves of the greatest service perhaps in eczema in its several forms. In chronic eczematous eruptions of the aged it affords much comfort, and often speedily effects a cure. Of late years I have extended its employment to other complaints of the skin, including herpes in its several forms. I have tried it in some cases of smallpox, with the view of diminishing the number of vesicles on the face, and of controlling their size. The latter indication it seems likely to fulfil; but I cannot speak with confidence about the former, the papules being already numerous at the time of my visit. I have also used it in several cases of carbuncle and furuncle. The first was in an instance of a huge carbuncle, situated on the loin of a man, and rapidly extending, notwithstanding free incisions, linseed poultices, and appropriate constitutional treatment. I applied a thick, wide circle of paint round the swelling, and dressed with resin ointment and cotton wool. There was no advance of the disease from that time, the centre rapidly broke up, and recovery took place. It is, however, probable, that the omission of the warm poultice may have contributed to the improvement, for I have often observed that warm poultices, however well made, seem to foster and spread carbuncular inflammations.

"The paint seems to act in two ways: first, and chiefly, as an efficient excluder of the air—that great irritant to the cutaneous surface when disordered; and, secondly, as a direct sedative to the sentient nerve filaments, rendering them less prone to become involved in inflammatory action. In boils it relieves the painful tension, and favours resolution. In some forms of painful ulcers of the leg, of a small size, it gives great relief. In galling of the skin, where anasarca is present, it is also of use, and is the best application that we have in burns of

the first and second degree. But it is in erysipelas that its triumph is most manifest; the patient soon finds the comfort of it; the tight shining skin soon becomes wrinkled and shrunken; indeed, the inflammation very rarely extends after the second or third painting.

"All my friends to whom I have recommended the pigmentum album speak highly of it; and one, who is a surgeon in the Peninsular and Oriental Company's service, has used it for the last two years with great success. The manner of applying it is by means of a feather, painting the affected parts and *a little beyond,* and laying on a fresh coat every two hours or so, until a thick layer is obtained, and then sufficiently often to maintain a covering. In erysipelas, it peels off in a week or so with the shed cuticle, leaving beneath a smooth, clean, healthy surface. Patients are struck with the benefit they derive from its employment."

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

(A) CONCERNING INFLAMMATION.

ART. 77.—*Burn by the rays of the sun.*

By Mr. CUTLER, Surgeon to St. George's Hospital.

(*British Med. Journal*, July 23, 1859.)

IN his treatise on Burns ('Leçons Orales'), Dupuytren mentions the solar heat as being occasionally the cause of severe burns, especially in tropical countries. "Many cases," he says, "are reported of persons who, having fallen asleep in the open air, have had various parts of the body burnt by the sun. In these cases violent inflammation occurred, promptly followed by gangrene, with death on the fourth or fifth day." He does not cite any instance or give any reference. In this country, accidents of this kind are especially rare.

CASE.—A little boy, æt. 10, was admitted into hospital on July 12th, severely scorched by the intense heat of the sun on that day. It appeared that he had been bathing, and, not having a towel, had amused himself by coming out of the water occasionally to bask in the sun, and then plunging in again. He had done this twice without feeling the worse for it; but the third time he went into the water, he felt a stinging, burning sensation over the whole of his body, which soon amounted to intense pain.

On being admitted, there was found what the French call "a burn of the first degree," or a scorched state of the integument over the whole of the back from the shoulders to the buttocks; and on the left shoulder a large bulla beneath the cuticle. The pain was great, and there was much tenderness to the touch.

He was treated by the application of rags, wetted with Goulard water, over the whole of the scorched parts; and when last seen (July 15th), was rapidly recovering, the redness beginning to fade, and the parts becoming less tender. There were no constitutional symptoms, and there can be little doubt of his speedy recovery.

(B) CONCERNING TUMOURS.

ART. 78.—*Cod-liver oil in Cancer.*
By Mr. J. ZACHARIAH LAWRENCE.

(*Medical Times and Gazette*, June 25, 1859.)

It would be but unprofitable to re-open at any length the question of the local or constitutional nature of cancer; but as the latter supposition forms the basis of the remedy proposed, it is essential to briefly recapitulate the arguments on either side.

That cancer is a local disease is asserted on the grounds:

1. That in some (confessedly purely exceptional) cases, cancers have been removed and have not returned (query, not ultimately?). 2. The marked predilection the disease has to fix itself on special parts, especially the breast and the uterus), and in certain cases (more especially of epithelioma) there to remain without any further extension to other parts of the body.

That cancer is a constitutional disease is maintained on the grounds:

1. The tendency it has to infest the most multifarious parts of the body, in certain characteristic (so called "acute") cases, with a rapidity wholly inexplicable, but as a result of a general diathetic tendency. 2. The fatal recurrence of cancerous tumours after the most complete removals, either *in situ*, or what is, perhaps, still more to the point, in parts quite remote from the original deposit—and that frequently after a period of apparent cure. 3. The marked constitutional symptoms, often independent of any adequate local explanation.

If we now turn our attention to the treatment of cancer, we shall find that this has, in the great majority of cases, been of a purely local nature, having for its object the removal of the primary tumour. But were we once to make up our minds that cancer is as truly a constitutional disease, as say phthisis, it would inevitably follow that any local treatment of the disease must as a curative agent prove utterly abortive. And such is truly the result of all experience on this point, and that of the most extensive character. Of all the cancer patients who have submitted to operations, whether by knife or caustic, how many have been cured? Of a number of cases of cancer of which Mr. Lawrence has watched the progress, he never saw a single one in whom the disease did not, sooner or later, return. It is perfectly true that the interval between the operation and the recurrence is often marked by an unwonted degree of vigour and health in the patient (even after the removal of cancers of rapid developmental power), but this he regards as another cogent reason for the constitutional nature of the disease. These apparent cures are what form the basis of the testimonials of the cancer-quacks.

The remedy which the author suggests is cod-liver oil, and he founds his suggestion on the following considerations:

1. That it has proved of the most signal utility in a disease which bears many points of resemblance to cancer—scrofula (and its subspecies, phthisis). Both diseases are characterised by extreme wasting

of the body—both by deposits of a morbid material. 2. The general absence of fat observed in the bodies of persons who have died of cancer. 3. The large quantity of fat observed (both by the microscope and the naked eye) in cancerous (especially encephaloid) tumours; the tendency to fatty metamorphosis of cancer products.

It would appear from these facts that cancerous tumours have some special tendency to rob the body of an element which plays an important part in the due performance of its functions. The most marked case he has met with, of the apparent good effects of cod-liver oil in the treatment of cancer, is mentioned in his 'Diagnosis of Surgical Cancer.' In this patient, a cancerous ulcer, measuring five inches by three inches, cicatrised completely up under its use, and her general health greatly improved.

(c) CONCERNING WOUNDS AND ULCERS.

Art. 79.—*Alcoholic stimulants in Snake-bites.* By Dr. Addy.

(*Boston Journal*, vol. lix, p. 68, 1859; and *Dublin Med. Press*, March 30, 1859.)

Dr. Addy writes, that on the western frontier of the United States, where rattle-snakes are numerous, and where physicians are often called upon to treat poisonous wounds by these and other venomous reptiles, they almost exclusively rely upon alcoholic stimulants, given in quantities sufficient to produce intoxication. The patient is not considered safe until drunkenness is produced, this being regarded by the practitioners as evidence of the effects of the poison being overcome. Dr. Addy relates a case in which the patient was entirely relieved by the free use of whisky.

Art 80.—*Muriate of Ammonia in Snake-bite.*
By Mr. P. A. Minas, Sub-Assistant-Surgeon at Sirsa.

(*Indian Annals of Med. Science*, Jan., 1859.)

Mr. Minas's statements deserve attention. The mixture used (which has been first used by Mr. C. E. Raddock) is made by boiling muriate of ammonia and chlorinated lime, of each ℥j in ℥xxiv of water, down to ℥xx and straining. "Internally ℥j of the above mixture is given every half hour; after administering about a dozen doses, the interval is increased, and so continued for twenty-four hours, after which the quantity is decreased, and the interval prolonged, and is entirely omitted when sickness or pain in the stomach is complained of, and a feeling of coppery taste in the mouth comes on. For the first twenty-four hours great precaution ought to be taken *not to allow the patient to sleep*. I have treated forty cases of snake-bites *and not a single death has occurred*, although the symptoms were of very aggravated or dangerous nature—viz., great prostration, vomiting, coldness of the extremities and surface of the body, very small, feeble faltering pulse, bleeding from the nose and fainting; yet these cases rallied and recovered. Again, during the month of August, a

great number of deaths from snake-bite having occurred in this district, immediately, through the kind aid of our Deputy Commissioner, Mr. J. H. Oliver, I distributed the above mixture to all the Thanas, and about a dozen cases who applied to the Thanas have been reported by the thanadars of different villages as cured; and the villagers evince great confidence in this mixture."

We may add that Mr. Minas incises the bitten part, cauterizes with nitrate of silver, applies ligatures between the wound and the heart, &c.

Art. 81.—*On the different forms of Syphilitic Inoculation.* By Mr. Henry Lee, Surgeon to King's College and Lock Hospital.

(*Proceedings of Royal Medical and Chir. Soc.*, June 28, 1859.)

The object of this paper was to show that primary syphilis does not always commence in the same way. The "specific pustule" in which all syphilitic diseases were formerly said to originate was produced by one kind of syphilitic inoculation only, and that form was one which does not give rise to constitutional or secondary symptoms. As nearly all the experiments on syphilization had been performed so as to produce this pustular variety of the disease, it followed that no fresh constitutional syphilitic disease could be engendered by syphilization so practised. The kind of syphilitic sore which infects the system commences in a different way, and when not artificially irritated, it gives rise rather to the adhesive than to the suppurative form of inflammation. This form of disease Mr. Lee had shown, in 1856, to be, as a rule, not inoculable upon the person who had it. This view had more recently been confirmed by the researches of French surgeons. But although not ordinarily inoculable, like the suppuratory form of the disease, yet it was capable of being rendered inoculable by artificial irritation. The results of the inoculation were, however, thin, uncertain in their results, producing little local irritation, and capable of being transmitted by successive inoculations a very limited number of times.

These observations applied only to inoculations performed upon the individuals who had at the time, or had previously had infecting sores.

The author described one kind of suppurating sore, which was surrounded by induration, which could not always be distinguished from the induration of the infecting sore. The induration could not, therefore, always be taken as the diagnostic mark of a sore which would infect the patient's system. The character of the secretion, however, gave the information which the induration did not always give. If care were taken to prevent any accidental cause of irritation, the secretion from an infecting sore would soon cease to be purulent; whereas, in the suppurating sore surrounded by induration (the phlegmonoid variety of suppurating sore), the secretion would continue as in other forms of suppurating sores, puriform to the last.

The number of cases of indurated sores, which had been said to have been inoculated by Dr. Sperino, and others, led to the conclusion

that the two forms of disease now described had not been distinguished from each other. It was now ascertained that the infecting sore could not, as a rule, be inoculated upon the patient having it, whereas the phlegmonoid variety of the suppurating sore was, of all kinds, the most readily inoculated.

When inoculated artificially, it produced a pustule, containing well-formed pus, within forty-eight hours, and it was occasionally followed by an eruption of a brick-red colour, confined to one part of the body, disappearing spontaneously, and not recurring. This eruption was, therefore, certainly not syphilitic.

The various points in the paper were illustrated by experiments, drawings, and tables of cases.

Art. 82.— *On the treatment of Acute Periostitis.*
By Mr. Curling, Surgeon to the London Hospital.

(*Lancet*, Sept. 3, 1859.)

"The treatment recommended in acute periostitis," says Mr. Curling, "is local depletion with calomel and opium. Just at the onset of an attack, in a superficial bone like the tibia, this treatment may be of service, but in periostitis of a deep seated bone, or if the inflammation do not speedily subside, such measures are not to be relied on. After matter has formed beneath the membrane, they are worse than useless. They weaken the patient without exerting any influence on the disease. There is then no way of averting serious mischief but by a free incision of the inflamed periosteum. Some of you evinced surprise when, in the case of L—, on my visit to the patient, though no fluctuation was perceptible, I determined at once to cut boldly through the thick vastus externus muscle down on the femur. There was, indeed, no other mode of preserving the bone. I was satisfied, after inquiring into the history of the case, and a careful examination of the limb, that the periosteum of the femur was acutely inflamed, and the incision revealed the presence of a small quantity of pus confined beneath it. The membrane was partially detached, and in a few hours extensive mischief would have ensued. This was arrested by the incision, and the almost immediate cessation of suffering, the rapid subsidence of the inflammatory fever, and the speedy restoration to health, were the satisfactory results of this decisive treatment. What would have been the condition of the patient had the operation been delayed, may be learnt from the second case. I did not see C— until after a large suppuration had taken place. The periosteum was extensively detached, and so distended by the pus effused beneath it, that when an opening was made, the matter gushed out with force over my clothes. In the first case, notwithstanding the early relief by an incision, slight death of bone ensued; but in the second case the necrosis was very extensive, and the inflammation having affected the cancellous tissue in the lower end of the tibia, the ankle-joint became at one time in jeopardy. Additional incisions were required, and under this treatment the urgent symptoms at length subsided, the inflammation in the periosteum and bone, and the necrosis, ceased to

extend, the work of restoration was set up, and the case had a favourable issue."

Case 1.—*Acute periostitis of the femur, followed by a small necrosis.*—Martha L—, a servant-girl, æt. 14, was admitted into this hospital Oct. 27th, 1858. She stated that on the 23d she was carrying a pitcher of water up some steps, when, owing to impaired vision consequent on nebulæ on the cornea after smallpox, she slipped and sprained her right knee. She slept but little that night, and next day was hot and feverish, and unable to stand. The pain gradually became so acute that she could not bear to move her limb, and she continued to get worse until the period of her admission. At this time she had all the symptoms of acute sympathetic fever. The right lower extremity was much swollen, and she cried out with pain when the slightest pressure was made in the course of the femur, especially at its lower part. On the 28th I saw the patient for the first time. She had passed a sleepless night, and her symptoms were those above described. I could detect no fluctuation over the femur, but I at once determined to make an incision down to the bone at its lower and outer part. The integuments and vastus externus muscle were cut through, and the periosteum freely divided, when a small quantity of pus escaped, and it was ascertained by the finger that the membrane was detached from the bone. But little blood was lost. Pressure with a sponge was maintained for two hours, to prevent hæmorrhage, and a poultice was afterwards applied. She felt greatly relieved by the operation, and slept well the night afterwards. The febrile symptoms subsided quickly, and, supported with a generous diet, she soon regained her health. The wound, after discharging pus for a few days, gradually filled up, till at length only a small sinus was left. It was ascertained, on examination with a probe, that a small portion of the femur was denuded; but, as she was able to get about, she was discharged March 10th, 1859, and directed, if the wound remained unclosed, to apply again for admission in three months' time.

She was readmitted in the May following. She was then in good health, had grown stout, and the muscles of the thigh were well developed. There was a sinus furnishing a slight discharge, and a probe passed down to the femur seemed to enter an aperture and to grate against dead bone. On the 26th I cut down to the bone, chiselled away a small portion, so as to enlarge the aperture, and extracted two small pieces of dead bone from the interior. There was no bleeding of any moment. The wound afterwards closed up readily. She was discharged July 18th, the sinus being nearly healed.

Case 2.—*Acute periostitis of the tibia, followed by extensive necrosis.*—Mary Ann C—, æt. 15, a girl of strumous appearance, but who had generally enjoyed good health, was admitted into the hospital on Feb. 14th, 1859. She stated that she had struck her left leg rather severely four days previously, since which it had become swollen, and excessively painful. Fomentations were ordered by the house-surgeon, and I saw her for the first time on the 17th. She was suffering from high constitutional fever. Her pulse was 200; indeed it could scarcely be counted; her tongue being dry and furred, and her cheeks flushed. She had no appetite whatever, and had not slept a minute for two nights. Her leg and ankle were greatly swollen and red in patches. There were great tension and extreme tenderness in the direction of the tibia. I at once made a long and free incision over the bone, when a large quantity of pus immediately escaped with considerable force. The finger, passed into the wound, came in contact with the tibia extensively denuded. She was greatly relieved by the incision, and the fever subsided rapidly afterwards. Abscesses, attended with a good deal of suffering and

constitutional disturbance, formed subsequently over both malleoli. They were opened, and found to be connected with the bone. Her health became so much impaired, and her strength so reduced, and there was so much swelling above the ankle, with indications of the joint being affected, that amputation seemed to be called for. I had her placed, however, under the influence of chloroform, and then, on careful examination, finding the ligaments tolerably firm, and being unable to detect any crepitus, I determined to watch the case a little longer. Some improvement was shortly manifested, though her recovery was retarded by the formation of another abscess over the internal malleolus, which was also opened. The improvement afterwards continued, and by the end of March, under tonics and a generous diet, the patient's strength was greatly restored. The wounds closed up a good deal, leaving numerous sinuses leading down to dead bone, with healthy granulations. The head of the tibia appeared to have retained its healthy state, but the rest of the bone gradually became greatly enlarged, the thickening extending to the inner malleolus.

June 30th.—I laid open some of the sinuses, chiselled away a quantity of soft new bone, and removed several pieces of dead bone. The necrosis was irregular, consisting, in some places, of a thin scale from the surface; in others, of nearly the whole thickness of the tibia encased in new bone, and in some places of small portions of the interior enclosed in the original bone, thickened, and soft in texture. One of the latter was extracted quite from the lower end of the tibia, and this communicated with the sinus over the internal malleolus. Since this operation, the patient has gone on extremely well. Her general health has improved; the sinus over the malleolus has closed up; the enlargement of the tibia has subsided, and the large wound has steadily healed up.

Art. 83.—*Cases of Acute Necrosis, followed by Pyæmia.* By Dr. Stone, Medical Registrar of St. Thomas's Hospital.

(*Medical Times and Gazette*, July 16 and 23, 1859.)

The general symptoms in these cases were such as would naturally mislead the observer. Indeed, this was so remarkably the case, that, although all were, strictly speaking, surgical cases, one was actually transferred from a surgical ward to the care of the physician, as being a case of typhoid fever. The other two were assigned to the physician, and treated and considered as acute rheumatism.

In the post-mortem examinations the extent of the local destruction is worthy of comment; the lower third of the radius, the lower two thirds of the femur, and the whole shaft of the tibia are in the several cases involved. Small masses of pulmonary apoplexy appear in the lungs in all the cases. In the first and third this condition has run on to the formation of abscess; in the second we have only the hæmorrhage, which, as co-existing with abundant evidence of suppuration in other organs, we seem justified in regarding as an early stage of the same morbid process. In all the cases there are abscesses of the kidneys; in two the muscular substance of the heart is infiltrated with pus, and more or less disorganised. In two cases, also, the muscular veins of the affected limb are stopped by adherent and decolorised clot, mixed with puriform fluid. In the first case this condition is also observed in the branches of the pulmonary artery leading to the

apoplectic effusions. In one case the spleen is the seat of several purulent collections. The liver, in two cases, exhibits an appearance not fully explained, but frequently seen under such circumstances. "It is not impossible," says Dr. Stone, "that some of the obscure cases of pyæmia on record may have originated in some such local lesion as this, which has remained undetected." We give two of the three cases related:

Case 1.—M. A—, æt. 15, servant. Admitted December 18th, 1858. A well-developed girl, of healthy aspect. Stated that she had always enjoyed good health previously to this illness. Had never had acute rheumatism, or other serious disease. The catamenia had only recently made their appearance, but were not in any way abnormal. Seems to have been in a good place, and not subject to any privation. Was well and at work until five days before her admission. At that date (December 13) she began to suffer from severe pain in the left forearm, especially on its posterior aspect. Some swelling appeared in the course of the day. Her general health does not seem to have been materially affected until the following morning (December 14). On that day she had a severe rigor, accompanied by vomiting, headache, pain in the chest, and cough. She took to her bed, and became rapidly worse, complaining of the same symptoms, with delirium, for the last night or two.

On admission, the general aspect was that of a case of acute rheumatism, with cardiac complication. As such it was taken in. It was not, however, thought possible, or desirable, to make a minute examination in the taking-in room. When seen in the ward, she was manifestly suffering from extensive and severe disease. The face was anxious and pale; the manner confused, and only partially conscious; although loud questions were rationally answered. Pulse 130, but only counted with difficulty from its feebleness. Respiration 44 per minute, accompanied with a moan. Skin cool, and not perspiring. Some ineffectual cough, and apparent inability to expectorate.

On examining the chest, loud rhonchus with large moist crepitation was audible in every part; and could also be felt as a thrill conveyed to the fingers. In an interval of respiration, the heart could be heard beating feebly, but with normal sound. There was no abnormal dulness, and no great tenderness of surface. The left arm and forearm were swelled and tense, rather red, and somewhat tender, though not acutely so. All the articular movements were easily performed, and without pain. Neither the wrist nor elbow-joints bore traces of rheumatic inflammation. The swelling was greatest in the middle and upper thirds of the forearm, of a doughy feel, giving no evidence of fluctuation. The hand was not at all implicated. Wine and a stimulant mixture were given; but she sank the same evening, without alteration of symptoms.

On post mortem examination, forty-two hours after death, the following morbid appearances were found:

The left arm was much swelled, and rather hard, with patches of redness. The lower third of the radius, exclusive of the epiphysis, was denuded in nearly the whole of its extent, and surrounded by thick pus, which infiltrated the cellular and muscular tissue in the neighbourhood. On making a section of the bone, its interior presented no unhealthy appearance. The muscular substance of the arm was generally healthy; but most of the superficial and muscular veins were filled with imperfectly-formed clots and puriform fluid. The wrist-joint and radial epiphysis were perfectly healthy, as was also the ulna. The brain was considerably congested, but otherwise healthy. Both lungs were slightly attached to the parietes by a layer of recent lymph. This

was unequally deposited in patches, and much more abundant on the left than on the right side. The lungs were of ordinary size, and for the most part crepitant. They presented numerous patches of pulmonary apoplexy, from the size of a filbert downwards, irregularly scattered from apex to base. Some of them were a little decolorized at the margin, and the small branches of the pulmonary artery connected with most if not all of them were distended with adherent decolorized clot, mixed, in some cases, with a little pus-like fluid. A few distinct abscesses, from the size of a horsebean downwards, were scattered here and there.

The bronchial tubes contained a large quantity of frothy fluid. The pericardium was lined by recent lymph. It was more abundant on the surface of the heart than on the parietal layer, and was chiefly aggregated on the left side. The heart was of ordinary size, and firmly contracted. Its surface presented beneath the false membranes numerous spotty and mottled patches of intense congestion and extravasation; and on making sections of the organ, many abscesses, from the size of a pea downwards, in various stages of formation, were found in the substance of the muscular parietes. The valves were healthy; the cavities contained a little partially decolorized coagulum. Peritoneum healthy. Liver of usual size, for the most part healthy. The surface presented several irregular pallid patches, surrounded by a broad congested margin. On section, these patches were found to be composed of blocks of tissue presenting similar characters, and extending some little distance into the organ. Spleen, pancreas, stomach, intestines, and supra-renal capsules healthy. The kidneys presented a considerable number of minute abscesses surrounded by congestion, but the organs were otherwise healthy. On microscopic examination of the fluid in the pulmonary branches, it was found to consist chiefly of distinct pus cells, but in some instances of granular matter and *debris* of coagulated fibrine.

Case 2.—M. H—, æt. 29, servant, admitted November 24, 1858. A robust, healthy woman, above the middle height, was stated to be suffering from rheumatism, and taken into a medical ward in consequence. It appeared she had been out of health for a fortnight, and that before that time she had been suffering from mental anxiety and some privation. She had, however, been able to do her duties as household servant until a week before admission. She had at first complained of severe pain in the right thigh, which had soon after become swelled and tender. Two days before admission there had been some aggravation of the symptoms, but without any change in character. When taken in, she had the aspect of a person suffering from acute rheumatism, with considerable febrile symptoms. She was quite sensible, and complained most of pain in the right thigh. On examination, this was found to be swelled and puffy, of a doughy feel, and very tender. It could not be discovered whether the knee-joint was implicated, from the great œdema and tenderness. There was no circumscribed redness or fluctuation in any part. An anti-rheumatic treatment was adopted.

On the following day (25th) she was much worse. After a severe rigor, she became violently delirious, throwing the bedclothes off her, and making much noise.

On the morning of the 26th, the delirium gave way to signs of collapse. These were accompanied by sudden and violent bronchitic symptoms; moist crepitation, both large and small, became audible in all parts of the chest, and could be distinctly heard when standing at the bedside. The face became livid and suffused; the respiration very rapid; pulse insensible at the wrist. She was able to speak sensibly and firmly until a few minutes before her death, which took place at noon of this day.

On post-mortem examination, twenty-four hours after death, the appearances were as follow:

The right thigh appeared unusually plump. On cutting down to the bone, a large quantity of thin pus escaped. The femur, in the lower two thirds of its shaft, was to a great extent denuded, and bathed in pus. The muscular tissue around was softened and infiltrated with pus. Many of the veins of the muscle were distended with coagulum, partly recent, partly buff-coloured and adherent; they contained in many places thick sanious puriform fluid. The bone was not completely denuded, for here and there soft shreddy muscular fibres were still attached to its surface; and in one oval patch, about two inches long and one inch broad, was a softish granular deposit of recent bone, thin at the margins, increasing in thickness towards the centre, and at the latter point presenting a circular orifice about a quarter of an inch in diameter, the bottom of which was formed by a denuded shaft.

The joint and epiphysis were healthy. On making a vertical section of the shaft, the greater part of the medullary cavity was found to be occupied by soft lymph, puriform fluid, and coagulum.

The larger vessels of the thigh and their contents seemed healthy.

There was a shallow commencing bedsore over the sacrum.

Brain congested, with some increase of serum on its surface; otherwise healthy.

Pericardium and heart healthy.

The pleuræ were for the most part healthy, and free from old adhesions. The surface of both lungs, however, presented two or three largish, exceedingly thin, and scarcely visible patches of recently deposited lymph. Each of these was found to radiate from a central spot, in which the subjacent lung was elevated, and of a black colour. On section, the black spots were found to be distinct apopleptic masses, from the size of half a marble downwards. There were about six in the left, and three or four in the right lung. All were clearly and wholly apopleptic; none was of the nature of an abscess, though one or two presented an imperfect buff-coloured margin. In addition to these, were some black elevated patches of extravasation into the subpleural tissue. The lungs were congested and œdematous, but crepitant. The bronchial tubes contained a good deal of secretion, and were somewhat congested.

Peritoneum healthy. The liver was of usual size, and for the most part healthy; its surface presented several irregular mottled patches of various sizes, which had a distinct port-wine colour, together with several tracts of remarkable pallor. The congested condition was quite superficial; the pallid extended some little distance into the substance of the organ. Spleen, stomach, pancreas, intestines, and supra-renal capsules healthy. The kidneys were for the most part healthy; the right was very large, and presented a group of indistinct abscesses, altogether about as large as a hazel-nut; the suppurating part formed an irregular cylinder in the cortex, consisting of a number of smaller imperfect cylinders of suppuration, separate from each other and surrounded by congested margins. On separating the capsule from the diseased tract, the small abscesses abutting on the surface were laid open.

ART. 84. *On the nutrition, inflammation, and ulceration of Articular Cartilages.* By Mr. BARWELL, Assistant-Surgeon to Charing Cross Hospital.

(*Med.-Chir. Review*, Oct., 1859.)

The results of a careful examination of the anatomy, physiology, and pathology of articular cartilages lead to the following conclusions:

1st. That although in the articular cartilage itself there are no vessels, there are situated immediately within the articular lamella a set of arteries destined to supply that cartilage with nutriment.

2d. That the articular lamella is composed of a finely tubular structure, which allows the nutrient fluid to find its way to the cartilage in finely divided streams.

3d. That the cartilage has no other source of nutriment.

4th. That the disease of the cartilage must not be estimated or named by the alterations which the hyaline structure undergoes, but by those which take place in the cells.

5th. That a certain number of these diseases are degenerative, but the larger number decrease or increase in the generative activity of the cells; the last of these attends all inflammatory diseases of the joints, and is itself inflammation.

6th. That the hyperæmia of this inflammation is situated in the vessels immediately beneath the articular lamella, and it is this hyperæmia which gives rise to the symptoms usually supposed to be produced by ulcerating cartilage.

7th. That simple degenerative diseases of the cartilage, as they produce no hyperæmia, produce no symptoms.

(D) CONCERNING FRACTURES AND DISLOCATIONS.

ART. 85.—*On the non-reducibility of Fractures of the long Bones.* By M. GOSSELIN.

(*Gaz. Hebdom. de Med. et Chir.*, No. 9 and 11, 1859; and *Med.-Chir. Rev.*, Oct., 1859.)

M. Gosselin observes that so generally do the books lay down the law that all fractures are reducible, that a surgeon is at first surprised when he discovers the fallacy of the statement.

The following is a brief summary of the author's views on the subject:

1. Even in cases in which there is no displacement, and there can be neither altered direction nor shortening, there may still be deformity, produced by a persistent increase of the size of the limb, at the level of, and to a certain distance above and below, the fracture. This deformity is of no great importance as long as the hypertrophied bone is not painful; but M. Gosselin has met with cases in which pain has persisted for years, and kept the patients from their occupations for a far longer period than is usually the case after fracture of the leg. He cites two of these cases.

2. *Muscular atrophy* is another cause of consecutive deformity, and sometimes of irremediable diminution in the strength of the limb. Nothing is more common than muscular atrophy after fracture, both in relation to the fractured segment of the limb, and to the segments above and below this. In almost every case a notable diminution of the whole of the limb is to be observed, except in the instance of fracture of the clavicle, which does not seem usually to be followed by muscular atrophy of the limb. The *cause* of this atrophy has been attributed by some to the compression exerted by apparatus, and by others to the prolonged immovability of the limb. M. Gosselin is disposed to search for the explanation in the diverted nutrition of the parts consequent upon the reparative process of the fracture. At all events, he is of opinion that the atrophy does not depend upon causes from the operation of which a surgeon can shield his patients. Thus far, any means he has tried to remove this condition—as electricity, shampooing, &c.—have been of little avail; but this may arise from the patients not deeming the amount of inconvenience they suffer sufficient to induce them to undergo a prolonged treatment.

The displacements consequent on a fracture offer some varieties: 1. The displacement, according to the direction of the limb, can usually be very well reduced, and it is in relation to it that the intervention of art is usually of utility. Still, the author refers to two cases of fracture of both bones of the leg, in which, in spite of every care, an angular displacement occurred; while certain cases of fracture of the fibula, whatever apparatus may be employed, and whatever care taken, may be followed by a little abduction of the foot and slight elevation of its external border. 2. Displacements according to circumference are rarely irreducible. Still this is the case with a considerable number of fractures of the neck of the femur, with permanent penetration of the upper into the lower fragment, rotation outwards not being corrigible by other than imprudent attempts. M. Gosselin has likewise met with three cases of fracture of the leg in which irreducible displacement in the circumference has occurred. 3. Of the displacements which take place according to thickness, some are corrected easily and are not reproduced, others are reproduced again, until prevented by diffused pressure; and others, again, are irreducible, do what we will. In several instances the author has been unable, in fracture of the leg, to place, even with the aid of chloroform, an upper or lower fragment which projected beyond the other. This he attributes to the indentation of the fragments, the teeth not fitting into each other during the efforts at reduction, except as a mere matter of chance. 4. In considering the displacement according to length, besides the part played by muscular action, account has not been taken of the considerable crushing of the bone which results from the reciprocal pressure of the fragments. Here there will be shortening of the bone with impossibility of restoring it, the shortening even becoming augmented by subsequent absorption.

4. *Fractures near joints.*—The frequency of fractures near joints, and the great liability to them of subjects aged more than fifty years, has been long known; but M. Vollemier, by introducing the term *penetration* in relation to fractures of the lower end of the radius,

MM. Hervey de Chegoin and Robert, by demonstrating such penetration in fractures of the neck of the femur, and M. Trélat, by calling attention to the intra condylian fractures of the lower end of the femur, have given quite a new impulse to the study of this description of fractures. But still there is wanting a generalization of these new facts and clinical deductions. In fact, these various fractures resemble each other in their mechanism and their lesions. 1. The fracture of the extremity of a long bone may take the transverse direction, and be unaccompanied by any crushing of the spongy tissue. This is the only fracture, indeed, recognised prior to Vollemier's investigations, but it is the most rare. 2. More frequently one of the fragments becomes so forced into the substance of the other that the penetration remains permanent, the spongy substance of the penetrated fragment being completely crushed. If the two fragments be separated, an accidental cavity will be seen to be hollowed out by the penetrating one, the latter usually presenting an irregular or toothed surface, which enters into such cavity. This variety is especially met with at the cervix femoris, and at the lower end of the radius. 3. In other cases, one of the fragments presents the depression and crushing of the spongy tissue, but the other is not lodged in this depression, and is removed from it some millimetres in front or behind—penetration having in fact taken place at the time of the accident, but not being maintained. This disposition is especially met with in the radius, and is more rare than the preceding or subsequent variety. 4. One of the fragments, usually the shorter, may be comminutively fractured—the penetration being more forcible and deeper than in the preceding cases. This variety is observed in stelliform fracture of the radius, in fracture of the neck of the femur when the great trochanter is fractured at the same time, and in fracture of the lower end of the femur, when there are at the same time intra and supra condylian fracture. To these cases a proper clinical import has not been given, and fractures are described just as formerly. But how are we to reduce fractures when their fragments are so solidly penetrated and ingrained as to be scarcely separable, even after death; or when one of the fragments has become shortened by crushing or by comminution? It is evident that surgery can do nothing here, and that the limb must remain enlarged and shortened, and that the action of the joint must be impaired.

5. *Therapeutical conclusions.*—It is not the author's object to deter from attempts at reduction of fractures. These, he admits, must be made, and in case of failure repeated. But when complete adaptation cannot be thus obtained, and the failure is explicable on one of the grounds mentioned, attempts should not be multiplied, or complicated and expensive apparatus resorted to. In the author's opinion, a careful and attentive surgeon may obtain with the most simple appliances all possible results. The consecutive deformities or imperfections may be inevitable; and it is an illusion to suppose that in all cases they may be completely prevented.

ART. 86.—*On the use of india-rubber "Accumulators" in place of Pulleys in Dislocation.* By Mr. MAUNDER.

(*Medical Times and Gazette*, May 28, 1859.)

The pulleys, in order to be properly worked, require, besides the surgeon who takes charge of the limb and performs any requisite manipulations, the aid of one, two, or three assistants, who cannot always be obtained, and who, if obtained, sometimes employ their strength in a very awkward manner, and are not implicitly under the control of the surgeon. They are also a cumbrous, expensive apparatus, and consequently not always at hand when required. The power which the surgeon employs by means of the pulley, Mr. Maunder proposes to replace by india-rubber, in the form of "Hodge's Accumulator" (a), the advantages of which are, that it is contained within very small compass, very portable, inexpensive, untiring, and makes the surgeon independent of the manual assistance of others. The extending power is contained in one or more india-rubber accumulators, fixed by one end to the dislocated limb, and by the other end to a hook attached by a cord to some body capable of resisting the extending force. By this means extension is effected very gradually, avoiding all risk of sudden jerking and consequent laceration of tissues and organs, while the power may be increased or diminished to any extent with ease.

The woodcut represents an india-rubber accumulator, four inches in length, in a state of rest, which, when stretched twenty-four inches, exercises an extending force of 30lbs. upon the body to which it is attached. Mr. Maunder finds that a man cannot, without very great exertion, exercise more than an extending power equivalent to 50lbs.: thus it will be observed, that while each individual accumulator is entirely under the control of the surgeon, the required force may be readily obtained by increasing the number of accumulators.

The ordinary dislocation apparatus may still be used, the pulleys alone being replaced by the accumulators.

(E) CONCERNING INJURIES AND DISEASES OF THE VESSELS.

ART. 87—*On the effects of Rupture of the internal and middle coats of Arteries.* By Dr. GEORGE SCOTT, of Southampton.

(*Med.-Chir. Rev.*, July, 1859.)

The conclusion to be drawn from several carefully conducted experiments are the following:

1. "When the internal and middle coats of a healthy artery of a *dead* human subject or of a *dead* animal are ruptured, either regularly all around the vessel, or irregularly at different places, there occurs,

in by far the majority of cases, no inversion or coiling up of the cut edges of the tunics, but these remain quite on a level with the other portions of the surface of the intima.

2. "Rupture of the inner coats of the arteries of healthy *living* dogs in the same way as described in the preceding paragraph is also, for the most part, unattended with any coiling up of the edges of the divided inner coats.

3. "Rupture of the intima and media of the arteries of healthy living dogs—whether in one line all around the vessel, or in several circular lines closely apposed to each other, or irregularly at different parts of the interior of the artery—is not of itself sufficient to cause coagulation of the blood in, and consequent obstruction of, the vessel at the injured part.

4. "Inflammation of the arterial walls, of such a degree as to cause great thickening of the same, and consequently a considerable diminution in the calibre of the vessel, is insufficient of itself to cause coagulation of the blood in, and consequent obstruction of, the artery at the point inflamed.

"I may also venture to observe that it remains yet to be proved that there exists any disease of the arterial coats producing such an alteration in the texture and physical properties of the inner tunics as to cause the same, when ruptured, to curl up into the tube, and, by mechanically occluding the canal, induce coagulation of the blood at the injured part.

"The objection to these conclusions may be made, that there are many well-authenticated cases recorded in medical literature of arterial obstruction caused by rupture of the inner and middle coats of the vessel. Of the fact that obstruction of the arteries did occur, of course there can be no doubt, but the alleged cause of the obstruction must, in my opinion, be called in question. In all such cases, save one, that I have been able to find recorded, the obstruction seems to me quite as easily explained on the embolic theory of coagula sent from a distance and becoming impacted in the arterial canal, as on the hypothesis of rupture of the inner coats of the vessel."

Art. 88.—*On painful Cicatrix and irritable Stump.*

By Mr. Hancock, Surgeon to Charing Cross Hospital.

(*Lancet*, June 23, 1859.)

Painful cicatrix occurs for the most part in situations where the skin is naturally in close contact with the periosteum, as over the lower portion of the fibula and inner surface of the tibia. The pre-existing wound may be painful, but as frequently not so, as long as it remains open; the pain coming on after the cicatrix is formed, when it becomes very severe. This, a point of some practical importance, led Mr. Hancock to pursue the treatment adopted in the following case—viz., "subcutaneous separation of the cicatrix from the periosteum," and the prevention of adhesion again taking place. These cicatrices have usually been dissected out; but the operation has proved very unsatisfactory, the relief being merely temporary, whilst the wound

remains open, and being lost when it closes; and we may readily understand why this is the case, when we recall the fact that the wound made in this operation must be filled up by granulations springing from the periosteum or bone, as the case may be,—when we also remember the contraction which takes places in all cicatrices so formed, how the delicate periosteal nerves must be implicated, and how this contracting or contracted cicatrix must be continually dragged upon and irritated by every movement of the limb or muscles of the part.

Case 1.—Mrs. B—, when about thirty years of age, suffered from suppression of the catamenia, for which she was on several occasions bled in the leg. After the last bleeding, pain having occurred in the spot, leeches and lotions were employed, but without any beneficial result, the pain being much increased, and very severe. This continued for three years, during which she was treated by most of the first surgeons of the day for disease of the vein. She next consulted the late Mr. Liston, who at once excised the painful spot. The wound healed, and she remained free from pain for nearly fourteen years, when it returned precisely in the same spot, and continued for several weeks very severe, and not relieved by treatment; there was neither swelling nor redness. Another surgeon of great eminence was then consulted. He proposed to remove the cicatrix, which was done with benefit for sixteen months, when the pain returned. The cicatrix was again removed, but the relief only lasted six months. Removal of the cicatrix was again recommended; but the patient desiring another opinion, Mr. Chapman, of Hounslow, under whose care she was, kindly brought her to me.

Her sufferings at this time were so great that she was willing to undergo anything that held out a probability of cure. She could not sleep at night, and appeared quite worn out with pain. Upon hearing the history of her case, I was struck with the fact, that after the last two excisions she remained free from pain so long only as the resulting wounds were open and unhealed, but that directly the cicatrix was completed the pain returned; and when, upon examination of the part, I found that the skin, or rather the cicatrix, was adherent to the periosteum, and perfectly immovable, I concluded that her sufferings were due to this cause, and that they would not be alleviated until the parts were separated, and the new skin as far as possible placed in the same position as that of the surrounding integument. I, therefore, proposed that the skin should be separated from the periosteum by a subcutaneous incision, and that a reunion should be prevented by moving the skin backwards and forwards from day to day as might be deemed necessary. This was agreed to, and accordingly, assisted by Mr. Chapman, on Sept. 15th, 1857, I performed the operation with the common tenotomy knife, the part cut through being very hard, like cartilage. Mr. Chapman, who attended the case afterwards, informed me that some little inflammation followed, but that it was readily subdued; that the skin was prevented re-adhering, and that up to the present time the patient has remained in good health, and perfectly free from pain.

You will find the same treatment of service in cases of irritable and painful stump after amputation. This malady has been ascribed to various causes, as, for instance, the flaps being made too small in the flap, or the bone being left too long in the circular operation; retraction of the muscles and soft parts; implication of the nerve in the cicatrix; undue development of the bulb at the cut extremity of the nerve; exfoliation of bone and adhesion of the cicatrix to the bone, &c., &c. Where the integuments have been cut too short, or where there has been undue retraction of the soft parts, you have what is

termed a conical stump, which you cannot mistake; where also there is exfoliation of bone, you may reasonably suspect its existence from the swelling and induration of the stump, whilst there will usually be redness and an opening with pouting granulation, marking the track to the exfoliating bone; but in other cases there is no sign of suffering for some time after the stump has healed, and, although the pain is almost unbearable, you will frequently be unable to detect anything abnormal either in the touch, colour, or quantity of soft parts. The character of the pain almost always points to implication of the nerve in some way or other, and accordingly operative surgery has been chiefly directed to this point; division of the nerve, excision of the bulb and a portion of the nerve, and secondary amputation being the plans adopted.

Excision of the bulb of the nerve, however, does not always succeed. I have done it myself in some two or three cases, but with only temporary benefit; and from what I have observed, I am inclined to believe that in many instances the suffering is not so much induced by the nerve or its bulb, as by the adhesion and connexion of the cicatrix by firm, unyielding cartilaginous structure to the periosteum or bone.

You will observe, in the following case, that this suffering occurs even though the cicatrix is not in immediate contact with the bone, but attached to it by an intervening mass or band; whilst the skin around the point of cicatrix corresponding to this mass is puckered in, there is a total absence of subcutaneous cellular and adipose tissue, present at other parts of the stump.

Case 2.—M. H—, æt. 30, admitted into Charing-cross Hospital, Nov. 30th, 1858. Had disease of the left knee-joint at ten years of age. At fourteen, the knee, being much swollen and very painful, was punctured, and a considerable quantity of blood escaped, but no matter. At sixteen, the catamenia first appeared; they left her for two years, and then returned, but with irregularity. At seventeen years of age she fell, and so much injured her knee that she went into the Royal Free Hospital, where the leg was amputated. The stump healed rapidly; but, accidentally falling upon the floor, she hurt the stump so much that it re-opened, and the bone protruded through the wound, which would not heal; the pain was intense, and subsequently about two inches of bone were removed. After this she recovered, and remained well until about four years ago, when she felt as though the limb was entire —as if the blood were rushing to every part below the amputation, accompanied with great pain in the nerves. The pain gradually increased, and ten weeks since it became more violent than ever, and was almost unbearable; so much so, indeed, that she begged me to amputate the leg higher up.

Upon her admission, on the 30th November, I carefully examined the stump, and found that the cicatrix at one point was tied down, as it were, to the end of the bone by a dense band about three-quarters of an inch long, and that any pressure upon this point increased her sufferings to a great degree. The end of the nerve, enlarged into a considerable bulb, could easily be distinguished, attached by this band to the bone also, thus accounting for the pain which she experienced in the course of the nerve. I had, upon previous occasions, in other cases, dissected out these bulbs, but with so little success, that I was convinced that the sufferings could not depend so much upon them as was usually supposed; whilst the result of the case which I have just related to you led me to expect that if the cicatrix were released from the bone so as to permit free movement, the patient would be relieved from pain without another amputation. Accordingly, on the 11th December, the cicatrix was separated from the bone by a subcutaneous incision, the connecting medium being so dense as to resemble cartilage. The soft parts were moved

gently over the bone for a short time every day until the wound was healed and all traces of tenderness had ceased. The stump, which had previously been puckered and baggy, became round and plump; the pain entirely ceased; and she left the hospital, cured, on the 14th January, 1859.

(F) CONCERNING INSTRUMENTS, ETC.

ART. 89.—*Water-glass, a partial substitute for Collodium.* By Dr. KUCHENMEISTER.

(*Mem. a. d. Prax.*, iii, 8: and *Med.-Chir. Rev.*, May, 1859.)

Preparation of water-glass. (Lehmann's Taschenbuch d. theor. Chem.) If ten parts of potassa are melted together with fifteen parts of powdered quartz, and one part of charcoal, a blackish-gray glass is obtained, which is soluble in five parts of water; on evaporating this solution, an opalescent, semi-fluid mass is formed, which has an alkaline taste, and reaction, and does not absorb carbonic acid from the air; by slow evaporation it is formed into a glassy mass of conchoidal fracture, unchangeable at the atmosphere; it is this water-glass= $3KO,8SiO_3$. A similar substance is obtained with soda.

The author has used this substance as an external application in cases of bee-sting, with an excellent result, and has found it to diminish the pain and swelling very promptly; he explains its efficacy partly by the circumstances that the alkaline water-glass neutralizes the acid of the bee's poison (formic acid,) partly by the fact that on evaporating slowly on the skin—similar to collodium, but somewhat slower—it forms a smooth and even coating, which protects the wound from the entrance of air, dust, and other foreign substances. Water-glass may thus be usefully employed:

1. *In cases of bites and stings of such animals which introduce an acid poison into the wound*, viz., bees, humble-bees, wasps, hornets, gnats, mosquitoes, bugs, toads, perhaps also snakes. But the author recommends the remedy particularly in cases in which ticks, sand-bugs, lepti autumnales, and crab-lice have bitten themselves into the skin, as the removal of the parasite is much facilitated by the application, the coat formed by the water-glass suffocating the animal by obstructing the tracheal openings which project from its body.

2. The application of water-glass proved also very efficacious in a case of *erysipelatous inflammation* of the hand in a child; in erysipelas ambulans of the face, the author has not been so successful with the remedy. Whether it could be used with advantage in mastitis, skin diseases of different nature, particularly those of the humid kind, or in tetter, with an acid reaction, remains to be ascertained; in herpes circinatus it is very useful.

3. Water-glass is one of the best means *to cleanse the skin* from tar, varnish, residues of plaster, etc.; it may perhaps be also usefully employed to clean the scalp in disease of the hair.

It is inferior to collodium in respect to tenacity, and is, therefore, less applicable in gaping wounds; in cases in which a coating is required to be durable if immersed in water, it cannot be used at all.

In order to avoid its crumbling off, the coating ought to be renewed from time to time. *It is preferable to collodium* on account of the greater readiness with which it can be removed.

ART. 90.—*On the use of Compressed Sponge as a remedial agent in the treatment of various Strictures, &c.* By Dr. J. P. BATCHELDER.

(*New York Jour. of Medicine*, May, 1859.)

The author of this paper has, of late years, devoted much attention to the treatment of surgical affections by compressed sponge, but seems to place more confidence in the article than it probably deserves. The most remarkable portion of his paper is, that pertaining to the treatment of malignant tumours: one case of scirrhous breast, two of cancer of the lower jaw, and one case of cancerous inguinal glands being perfectly cured, while several other cases were much improved. For the details of these cases we must refer to his article, of which the following is a brief abstract:

In preparing the plates of sponge, Dr. Batchelder uses a fine and dry article, and compresses it by means of a common copying letter-press, or a heavy weight, under which it is to be kept until wanted for use. The other form is that of a tent, which is made by transfixing a fine wet sponge with an awl, and wrapping it firmly with a cord or packthread; when it dries, the awl is removed, and the tent is ready for use; or the sponge is moistened with mucilage, and prepared in the same manner, being, when dry, trimmed smooth with the knife. The latter is applicable to cases in which the tent is difficult of introduction, and the moisture of the parts might produce its premature expansion, as in dilatation on the canal of the neck of the uterus. When employed in internal parts, the tent should be attached to a cord to facilitate its removal.

The author first applied compressed sponge, with marked success, to enlargement and abscesses of the female breast; and reports of cases, published in late years, fully confirm its utility. The object of the present paper is to point out the various surgical affections in which it may be employed.

1. *Dilatation of the canal of the cervix uteri for the relief of sterility, difficult menstruation, and other affections.*—The tent, prepared with mucilage, is carried up to the os with a pair of long-bladed forceps, or a stilet, constructed expressly for the purpose, and, by slight pressure upon its base, is made to enter the cervical canal. It should be removed every twenty-four hours to prevent irritating and offensive secretions, and the vagina should be well syringed with water. The speculum will sometimes be useful; and as the canal of the cervix is occasionally very small, it will, as a preliminary measure, be necessary to enlarge it with fine metallic dilators, until a small tent can be introduced. When the object is to induce premature labour, the tents should be worn continuously, and be gradually increased in size. In pregnancy, complicated with hæmorrhage, when the os is partly open, but unyielding, and the labour is tardy, the tent, by making a

good tampon, stops the flow of blood, excites the dilatation of the os, and also uterine contractions.

2. *Dilatation of sinuses.*—In most cases of sinuses, the sponge-tent, by producing a change in their lining membrane, and a free purulent discharge, effects a cure. From time to time the tent should be made larger.

3. *Anal fistule.*— In abscess of the ano-rectal region, a free and early incision should be made, and a sponge-tent introduced to favour the free discharge of pus and the healing of the cavity from the bottom. When the abscess has opened spontaneously, and formed an incomplete fistule, a tent introduced into the cavity fulfils the same indications, and, by keeping the external orifice open, prevents the collection of pus, which, by its pressure, would produce the absorption of the septum between the rectum and cavity of the abscess, and thus producing an internal orifice, a complete fistule being formed. When, therefore, there is no internal opening, the method will be found successful.

4. *Diseased bone with fistulous passage.*—In most of the cases of caries or necrosis of the bones in which the author has tried the sponge-tent, a cure has resulted without resorting to the knife or scraping instruments. In a few weeks the sinus can be dilated to such an extent as to admit of the introduction of several fingers, or a pair of forceps, for the removal of the sequestrum or the ulcerated bone, by the repeated application of the sponge. Several cases of strumous or syphilitic enlargement of the bones, have been cured by plates of compressed sponge, aided by appropriate constitutional remedies.

5-6. *Dilatation of the meatus auditorius, and affections of the nasal cavities and bones.*—In cases of contraction of the external auditory canal, the sponge-tent may be used with advantge, as well as in ulceration, contraction, and other affections of the nasal bones and cavities.

7. *Dilatation of strictures of the recium.*—The author mentions three cases of rectal stricture treated with the sponge-tent, one proving fatal, as the disease was malignant, the other two being cured. The tent should be prepared with mucilage, if there be much irritability, being used larger as occasion requires. When the irritability and sensitiveness of the part are great, it will be well to precede the use of the tents by anodyne suppositories.

8. *Internal Piles.*—The tent, introduced just within the rectum, may prove useful in bleeding piles, or hæmorrhage of this portion of the intestine.

9-10. *Stricture of the urethra and dilatation of the female urethra.*—In cases of urethral stricture a metallic sound should first be pressed against the resisting part; when, being withdrawn, a tube, containing a transfixed tent and a piston, is carried down, and by pressure on the piston, the tent is made to enter the stricture. When it is firmly in place, a few drops of water, or if there be irritability, of an anodyne solution, are passed down the tube to moisten the sponge. The cord attached to the tent should be guarded with a button to prevent its passing back into the bladder. It is best to allow the expulsory power of the bladder, in micturition, to remove the tent;

should this not succeed, gentle traction may be made. When it is deemed necessary to dilate the female urethra for the removal of foreign bodies from the bladder, the sponge-tent will be found to answer every purpose.

11. *Morbid growths.*—The compressed sponge, by its firm and equable pressure, induces the absorbents to remove tumours, whether benign or malignant, and should be confined in its place by the bandage, both being kept constantly wet. In cases of malignant growths, if not removed entirely, they may be rendered harmless for years; and the author reports, in support of this opinion, a case of scirrhous tumour of the breast, completely cured in about two months; a case of scirrhous growth of the breast and a scirrhous nodule on the outer edge of the pectoralis major, in which the nodule entirely disappeared, and the tumour of the breast had greatly diminished, when the patient was lost sight of; a case of ulcerated malignant tumour of the breast, with well-marked cancerous cachexia, in which a sponge-tent was kept in the fistule, dilating it to a large size, with the result of a diminution of the tumour and a great improvement in the general health. The patient was lost sight of, but probably died. In three other cases of malignant disease of the breast, it produced diminution of the tumours, and prolonged life. In two cases of malignant disease of the lower jaw (epulis?), both patients were cured. It has also been found useful in the removal of the callous edges of ulcers.

12. *Cancer of the penis, with enlarged glands of the groins.*—The penis was amputated, and the glands removed with the compressed sponge; the patient's health was much improved, and the cancerous cachexia disappeared.

13-14. *Swelled testicle and vegetations.*—The testicle or penis is to be turned up over the pubes, and retained in position by the spica bandage, which, with the sponge, is kept constantly wet. The author has great confidence in emesis in the case of swelled testicle, and in that of warty excrescences he draws off the urine with a flexible catheter, so as not to disturb the dressings.

15. *Non-malignant tumours.*—Enlarged lymphatic glands, especially buboes, are speedily removed by this means. Dr. Batchelder states that, in the last fifteen years, he has had but two cases of suppurative bubo, and these were owing to the imprudence of the patients. In addition to the sponge and bandage, in these cases, he recommends a hernial truss with a glass pad and strong spring, the pressure being properly graduated.

16. *Enlarged joints.*—In cases of effusion within the joints from synovitis, or in effusion from any cause outside the joints, the sponge has succeeded, especially in the latter, better (in the author's hands) than any other means.

17. *Compressed sponge as a styptic.*—In wounds of certain arteries it is not always practicable to apply a ligature, and the surgeon relies, for a time at least, on compression. In regard to wounds of the palmar and plantar arteries, the author says: "The phenomena attending these wounds are often somewhat peculiar. The blood forced extensively into the surrounding cellular substance, perhaps under the aponeurosis, comes welling out from a considerable surface, which

renders it quite difficult to find the wounded vessel. If this surface be scraped again and again with the handle of a scalpel, the extent from which the blood issues will be lessened down to a small space." Upon this he places a small piece of pointed compressed sponge, confining it by means of a compress and a roller, and flexes the arm at an acute angle, a position which renders pulsation at the wrist almost imperceptible.

18. *Pachydermatocele*.—This affection, first described by Dr. Mott, is congenital, and consists of a hypertrophous condition of the skin and subcutaneous cellular tissue. Dr. Batchelder has seen three cases of this disease, which were operated upon by Dr. Mott, and in all the affection returned. After its recurrence in one of these cases, in which the mass hung in folds on the side of the face, the author applied, not without some difficulty, the compressed sponge and roller. In about two months, the whole mass, excepting a small portion near the eye, which had resisted the treatment more than any other part, had become absorbed, and the patient, thinking the rest would disappear, ceased to consult the author. In a few months, however, he returned, the mass being larger than before. A renewed and persevering application of the same means effected a cure.

19. *Varicose Veins*.—In one case the author applied the compressed sponge over the internal saphenous vein, and confined it by a vulcanised India-rubber bandage. The dressings were worn only through the day, and had the effect of relieving the symptoms, and rendering the patient's locomotion much more comfortable. It is not stated whether a cure was effected.

(G) CONCERNING ANÆSTHETICS.

ART. 91.—*On Voltaic Narcotism.* By (1) Dr. RICHARDSON, Physician to the Royal Infirmary for Diseases of the Chest, &c.; and (2) Dr. A. WALLER, Physician to Queen's Hospital, Birmingham.

1. (*Medical Times and Gazette*, June 25, 1859.)
2. (*Ibid.*, March 19, May 25, and July 30, 1859.)

(1.) Since the appearance of his first paper, a notice of which will be found in our last volume (p. 267), Dr. Richardson has been steadily engaged in pursuing the same inquiry. He now writes:

"Firstly, then, it may be accepted as a fact, that by the process I have suggested, such degree of local insensibility may be produced as shall enable the surgeon to perform a large number of operations without pain. I mean this as a general rule, open, as we have seen, to exceptions.

"This admitted, the question arises as to the mode by which the local anæsthesia is produced. My esteemed friend, Mr. Nunneley, of Leeds (in an essay published in the 'Transactions of the Provincial Medical Association' for 1849), has pointed out, by a variety of experiments, that the mere local application of narcotic solutions will produce a certain degree of local anæsthesia. Nothing could be more conclusive than Mr. Nunneley's argument, and I have all along been

alive to the fact of simple absorption as an important part of the process now being considered. The effect of the voltaic current, as I have employed it, makes the insensibility to extend more deeply, and renders it, as a general fact, more complete.

"As to the reason why a continuous current of electricity should exert the influence above named, the argument is simple enough. The current itself has no anæsthetic effect. That is certain; but it has the power of quickening the capillary circulation in the structures through which it is transmitted, and the absorption process is therefore more rapid and determinate. That various medicinal substances may be passed into animal bodies locally by the voltaic current was first suggested (as Dr. Althaus has been good enough to inform me) by Sir Humphry Davy; and Fabré-Paraplat and many other experimentalists have endeavoured since Davy's time to prove this by demonstration. Differences of opinion have thus been called forth; but the first and affirmative statements have never been disproved.

"That there should be differences of opinion from experiments conducted by different persons, is not difficult to believe by any one who will peruse those which I have described. These difficulties may depend on peculiarities in the subjects operated on; they may depend, and I confess this is more likely, on the ignorance which pervades the wisest of us, as to the influence of electricity on the organism, and on our further ignorance of the laws of the electrical force altogether.

"Turning to more common, but yet practical points, I observe that there are certain disadvantages in the process I have suggested which it would be unfair to suppress. The first disadvantage is, that the time required for the production of insensibility is long; the second, that some degree of pain is produced during the first stages of the application, which pain, however trifling, destroys the confidence of the patient; and, thirdly, that the apparatus necessary is cumbersome. The production of vesication of skin, to which I have referred, as following the process, is also objectionable. This is produced by the chloroform.

"It will occur to many that the objections here noticed are all removeable, and of this fact there can be little doubt. In the present initiatory step, I neither claim for the apparatus nor the narcotic solutions employed any particular favour: it is sufficient at first to introduce a principle; details may be left to time and experiment.

"I have been asked whether the plan now suggested has any advantage over the freezing process invented by my friend Dr. Arnott. The answer to the question is, that the freezing process is most ready in application and quicker in action, while the narcotic process produces deeper insensibility and no induration of tissue. The latter advantage is considerable in operations where structures have to be carefully dissected, as in the operation for strangulated hernia; but, *in the main*, the freezing process is, for the present, most practicable.

"Compared with chloroform in its character as a general anæsthetic, the plan of anæsthesia now offered is unfavorable, except in one particular—its absolute safety as regards life. But this advantage is so great, that, however trifling the risk of inhaling chloroform, I should

prefer (were I the subject of an operation in which it was applicable) the local plan, notwithstanding its present incompleteness; and this, not from fear, but from the feeling that it is common prudence to avoid even a slight risk, when avoidance is as convenient as exposure. In fine, in the practice of anæsthesia, it is the correct rule to be conversant with all the means for producing insensibility, and to select the means by the case. Monomania is specially stupid in physic."

(2.) Dr. Waller is entirely at issue with Dr. Richardson. He holds:

That insensibility from so-called voltaic narcotism is produced solely by the local absorption of the chloroform and aconite mixture.

That anæsthesia is produced with equal efficacy by the mere topical application of the narcotic mixture.

That the narcotic fluid generally produces inflammation and disorganization of the skin, and consequently that voltaic narcotism creates unfavorable complications in surgical operations.

That the insensibility is confined to the skin, and does not extend to the deeper-seated parts.

That its application is to be avoided in cut or abraded surfaces, or on the skin of infants where the cutis is very thin.

"It is from having inadvertently come across some of the effects of the remarkable action of chloroform, as an accelerator of absorption," says Dr. Waller, "that Dr. Richardson has been led to draw such erroneous conclusions respecting the so-called process of voltaic narcotism." And certainly this action of chloroform is very remarkable.

"In a memoir, recently laid before the Royal Society," says Dr. Waller, "I have examined into the action of various agencies which influence cutaneous absorption; and as it will shortly be published, I will only mention here some of the leading results at which I have arrived, and here described.

"My principal experiments on absorption have been made by applying to the skin solutions of different alkaloids, as atropia, strychnia, morphia, &c., watching carefully the symptoms of absorption, and noting particularly the effects produced on the pupil. By these means, the influence of age, of circulation, of innervation, &c., may be ascertained and accurately measured. I found a still more powerful influence than either of these on the rate of absorption exists in the nature of the menstruum, or vehicle of the alkaloid. The menstrua, with which I have experimented, are chloroform, alcohol, water, and turpentine. Chloroform I find to exert the greatest accelerating influence on cutaneous absorptions, of all those yet tried by me. Alcohol, on the contrary, I find to possess the greatest retarding action.

"With chloroform, for example, I find that atropia will dilate the pupil after its simple topical application, in the space of from two to four minutes; whereas the same proportion of atropia in alcohol will produce no influence on the pupil, even after the lapse of thirty minutes and upwards. Water and spirits of turpentine, as vehicles, hold an intermediate place between chloroform and alcohol, or spirits of wine."

"Atropia is particularly well adapted to ascertain the exact influ-

ence of the various menstrua and other agencies on absorption. I have likewise found the same laws to obtain with aconite, morphia, strychnia, and many other alkaloids, and a solution of equal parts of these in chloroform, possess so great an influence on absorption through the skin, that the simple application of some of the former will cause death in a few minutes; whereas an alcoholic solution of the same may be applied from thirty to forty minutes without any effects whatever. Thus, the same agent which is perfectly innoxious in one case becomes rapidly fatal in another. It was from having inadvertently come across some of the effects of this remarkable action of chloroform, as an accelerator of cutaneous absorption, that Dr. Richardson has been led to draw such erroneous conclusions respecting this so-called process of voltaic narcotism, which will remain as a remarkable instance in physiology of drawing hasty inferences on the one hand, and on the other of the advantages of eliminating all extraneous causes, and of reducing phenomena to their simplest expression before venturing to explain them."

Art. 92.—*On Anæsthetic agents.* By Dr. Glover.

(*Lancet*, Nov. 6, 1859.)

Many attempts have been made to substitute other anæsthetic agents for those commonly in use. The number of bodies possessed of anæsthetic properties is very numerous. They may be arranged as follows:

1. Protoxide of azote, NO.
2. Carbonic oxide, CO; carbonic acid, CO_2.
3. Light carburetted hydrogen, CH_2; olefiant gas, C_2H_2.
4. Ethyle series: Alcohol, $C_4H_5O + HO$; sulphuric ether, C_4H_3O; nitric, $C_4H_5O + NO_5$; acetic ether, $C_4H_5O + C_4$, H_4O_3; hydrochloric ether, C_4H_5; Chl. and hydroiodic, hydrobromic and formic ethers.
5. Acetyle series: Aldehyde, $C_4H_3O + HO$; Dutch liquid or chloride of olefiant gas, and doubtless the corresponding bromide and iodide; monochloruretted chloride of ethyle (see Dr. Snow).
6. Formyle series: Chloroform, bromoform, and iodoform.
7. Compounds of methyle, pyroxilic spirit or wood naphtha, $C_2H_3O + HO$; rock naphtha, C_4H_5; coal naphtha; formomethylal (uncertain composition); methylal, C_2HO, HO and $2C_2H_3O$.
8. Turpentine, $C_{10}H_8$; benzoyle, $C_{12}H_6$; camphor, $C_{10}H_8O$; creosote, $C_{14}H_{16}O_4$.
9. Bisulphuret of carbon, CS_2.
10. Amylene, $C^{10}H_{10}$.
11. False anæsthetics, as sulphuretted hydrogen, prussic acid, coneine.
12. Mixed bodies, as oleum ethereum, chloric ether.
13. Acetone, C_3H_3O.*

Of all these bodies, only three are likely to enter into composition with ether and chloroform: these are the Dutch liquid, amylene, and formomethylal.

* It will be observed how much carbon all the true anæsthetics contain.

"The first," says Dr. Glover, "is the most likely to take the place of chloroform. It is a beautiful, colourless, and volatile fluid, which, in smell and taste, somewhat resembles chloroform. It is, however, more agreeable. I have tried it, and found it answer exceedingly well; and Mr. Nunneley, of Leeds, has especially studied its properties. He found it as powerful as chloroform, and more free from dangerous and disagreeable effects. Animals were quite as completely brought under the influence of the one as the other. Mr. Nunneley used it in several operations with perfect success; but if it can only be obtained at the enormous price which I paid a London druggist for it, its use can never become general. The substance amylene was found to produce perfect anæsthesia. Dr. Snow, after using it in a hundred and forty-four cases with success, had a death from it in an operation for fistula in ano; and, shortly after (July 30th, 1857,) another death occurred in the hands of the same practitioner. The substance called formo-methylal appears worthy of attention. I tried it on animals with perfect success; but in attempting its preparation in considerable quantity twice, formidable explosions occurred.

On the whole, then, practically, as far as our knowledge goes, the only anæsthetics likely to be of permanent use, are ether and chloroform. Many have proposed the use of a mixture of the two, and different proportions have been recommended.

II. SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 93.—*Remarkable case of recovery after Fracture of the base of the Skull, and other very serious injury.* By Mr. HOLTHOUSE, Surgeon to the Westminster Hospital, &c.

(*Lancet*, Aug. 6, 1859.)

In this case, not only was the base of the skull fractured, but the head of the right thigh bone was driven through the acetabulum into the pelvis, and there was compound fracture of the leg requiring amputation—a triple lesion, either part of which was sufficient, under ordinary circumstances, to destroy life.

CASE.—Edmund C—, æt. 28, was carried into the Westminster Hospital, on the 13th of last May, having fallen from a height of 60 or 70 feet, from the giving way of some scaffolding at the Westminster Palace Hotel. When first admitted, he was unconscious; there were bleeding from the left ear, and dilatation of the left pupil; subsequently slight ptosis of the upper lid of the same side was observed; there was also a fracture of the pelvis of the right side, the right lower limb was shortened and everted, simulating a fracture of the neck of the femur, and a compound fracture of the left tibia, with laceration of the posterior tibial artery, existed. Besides the ptosis and dilatation of the pupil, there was no other paralytic symptom.

For the first few days the patient seemed scarcely recovered from the shock, his pulse was exceedingly feeble, and his death was expected daily. The head

was shaved, wet lint applied to it, a Liston's splint was placed on the outer side of the limb with a cradle over the leg, and a pledget of wet lint to the wound in front, which communicated with the fractured tibia. His diet was strong beef-tea and brandy. A new set of symptoms now appeared; the patient became violently delirious, or rather maniacal, shouting and screaming, and tearing off his bandages, which he said gave him so much pain that he could not bear them. Nothing could be kept on his head, which appeared very tender on pressure. Hæmorrhage also, to a small extent, took place from the wound in the leg, which was easily repressed by pressure, but it continued to recur at intervals till the 7th of June, when the posterior tibial artery, from which the blood was found to proceed, was tied. Up to this time the outbursts had always been arrested by pressure over this vessel, and the patient was altogether in so feeble a condition as not to admit of the operation being performed earlier.

On the 9th, at nine p.m., hæmorrhage again took place from the original wound in front of the leg; and the house-surgeon, supposing that the ligatures round the vessel had given way, reopened the wound which had been made to secure the vessel, but found everything in its place, and no blood between its lips: the hæmorrhage was therefore assumed to come from the anterior tibial or peroneal arteries. A tourniquet having been applied, and local pressure made, the bleeding was stopped; but as a good deal of fœtid unhealthy pus escaped from both wounds on pressure, Mr. Holthouse considered that the patient would have a better chance of recovery if his leg were removed, than if another operation were performed in search of the bleeding vessel. Taking advantage, therefore, of the incision which had been made previously to secure the posterior tibial artery, another was made parallel with it on the outer side of the limb, and the two connected by a transverse incision below: a very good and abundant anterior flap was thus formed of skin only, while a short flap posteriorly completed the operation, according to Teale's method. The patient lost but little blood, and rallied well from the operation. It was observed at the time that a portion of the skin forming one of the lower angles of the anterior flap was thickened, indurated, and unhealthy-looking; and on the 14th, this was found to be in a state of slough; the patient's pulse, also, was very frequent and feeble: he was therefore ordered three grains of quinine every three hours, and the brandy, of which he had previously taken fourteen ounces daily, was increased to twenty-four ounces. Several of the wire sutures were removed, and a yeast poultice applied to the stump.

June 15th.—The sloughing process was arrested; the appearance of the patient had much improved; the pulse had fallen to ninety-two, and was stronger.

17th.—Slough separating; pulse 88; his general appearance much improved. He will have a good stump, the slough not having extended to that portion of the skin which covers the ends of the bones.

19th.—Slough quite separated, and its place occupied by healthy granulations.

24th.—Stump nearly healed; pulse 66; tongue clean; appetite good. He was yesterday placed on full diet, and has twenty ounces of brandy and a pint of porter daily. Convalescent as regards his general condition, but he is not yet *compos mentis*, being still unable to converse in a rational, consecutive manner. He will answer the first question put to him rationally, but will then diverge into some topic altogether irrelevant. He has no memory of anything that has happened; he cannot even remember events occurring only a few hours since, and will lose his temper with the nurses or his wife,

whom he charges with neglecting him, and not coming near him, notwithstanding their attentions have been most assiduous, and he has never been left alone.

July 18th.—A few days after the last note was made, his intellectual faculties returned, and for the last fortnight he has been going about the ward on crutches, and is gaining strength and flesh. He recollects nothing of the accident, beyond the fact that he was wheeling a barrow on the scaffolding at the moment it gave way; but from that time till the 26th of June, when he was removed from a private ward in which he had been placed into the general ward, his existence was a blank. He has no recollection of either of the operations, and was surprised to find he had lost his leg.

Art. 94.—*Remarkable case of recovery after Fracture of Base of Skull* By Dr. John A. Lockwood, Surgeon U. S. Navy.

(*American Journal of Medical Science*, April, 1859.)

In this case there was copious discharge of blood and watery fluid from the ear, *with a portion of unmistakeable brain-substance*, and yet the patient recovered.

Case.—John Smith, third ordinary seaman, æt. 30, on the 19th September, 1855, on board the U. S. ship Constellation, at sea, fell from the spar to the main deck, down the fore-hatchway, striking plumply upon the crown of the head. When examined, there existed insensibility, a very feeble pulse, foaming at the mouth, stertorous breathing, copious flow of blood from right ear, and from the nose. Three hours subsequently the pulse had rallied; he was capable of being aroused; no epistaxis; bleeding from ear diminished; a small quantity of brain had come away with the blood from right ear. The amount of blood which escaped from the ear during the first four hours was very considerable, estimated at fifty or sixty ounces. Cut cups depressed the pulse; a stimulating injection was retained for several hours, acting freely when conciousness was restored. During the night discharge of blood and serum continuous, and comparatively moderate. Reposed quietly.

September 20th.—Inclined to be comatose; aroused with some difficulty. Moderate discharge of serum or watery matter, coloured with blood. Small particles of brain taken from the meatus, and carefully examined by assistant-surgeon Wyatt M. Brown and myself.

21st.—Disposed to sleep. When not asleep, restless, and wishes to walk about; wants his grog; no lack of muscular power; mind wandering; complains at times of pain in head; pulse natural; coloured discharge as before.

22d.—Intellect clearer; more headache; discharge continuous, but no longer discoloured.

23d.—Mind quite clear; during night renewed discharge of blood from ear and nose.

24th.—Violent pain across the forehead; watery discharge.

25th.—Severe suffering from headache during the night; this morning succeeded by a sense of fulness; watery discharge as before.

26th.—Less pain; sense of fulness instead; watery discharge as before.

October 23d.—Returned to duty. Still complains of a ringing in the ears, and a sensation described as a "stoppage in the head." He is quite robust, and otherwise in good health. The watery discharge from the ear did not entirely cease for nearly a month. At one time it was sufficiently copious to wet disagreeably, during sleep, his pillow, and necessitated plugging the orifice of the ear before going to bed. For a short period the discharge was yellowish, and of an offensive odour, probably from an internal abscess.

Agreeably to Smith's own statement, he had been epileptic since 1850. He had experienced two attacks since joining the ship, seven weeks before the accident, and it was on the incursion of a third that he fell through the hatchway. After the injury, he escaped with a single fit during the succeeding three months. The following spring he was discharged the navy, and I have not been able to trace his further history.

The diagnosis in this case I regard as unmistakable. The very copious flow of blood from the ear, the discharge by the same outlet of watery matter, and a portion of the substance of the brain itself, proves that a fracture of the skull at its base (produced by a *contre-coup*, when the full force of the fall was sustained by the vertex), had involved the petrous portion of the temporal bone.

Art. 95.—*Sub-periosteal resection of the inferior maxilla, without any external incision.* By Dr. Paravicini.

(*Annali Universali di Medicina*, 1858, and *Gaz. Méd. de Paris*, July 16, 1859.)

The following case is accompanied by some general remarks on sub-periosteal operations, the principal object being to show that by means of such operations, amputations of limbs and other serious mutilations may often be avoided. The case itself is of considerable interest.

Case.—A woman, æt. 24, of a lymphatic temperament, married, and several times pregnant. Soon after her first confinement in October, 1857, she became affected with an indolent, hard, knobby, swelling of the gum on the left side of the inferior maxilla. In the course of the twelve months following, this tumour became of considerable size. The teeth upon it loosened and fell out, and several unhealthy ulcerated places made their appearance. The character of the disease was not very obvious. At this time Dr. Paravicini dissected out the tumour, and applied the actual cautery to the exposed bone, and shortly afterwards the patient left the hospital, apparently well. Under the microscope the tumour presented no signs of a malignant character. A month later the disease had returned, and matters were worse than they were at the time of the operation. At this time also, there was no doubt that the bone was implicated. Under these circumstances, Dr. Paravicini decided upon the sub-periosteal resection and disarticulation of the affected half of the inferior maxilla. In order to this, the patient was put under the influence of chloroform, and a cork placed between the molar teeth on the sound side. Opening the lips wide, incisions were then made down to the bone, parallel to the alveoli and below the tumour, and by means of the finger and a director, the periosteum was detached from the bone. This was a difficult matter in many parts, and particularly under the attachments of the temporal and masseter muscles, but eventually it was accomplished. A knife was only necessary to divide the dental nerve and artery. Having dissected in this manner the bone out of its periosteum, the bone itself was cut through by strong bone-forceps in the median line and at a little distance below the condyle. After this, the remaining portion of the ramus was seized with a pair of strong forceps, and the head of the bone was brought away by a wrench and sudden turning movement—a proceeding which left the cartilage in the glenoid cavity. The whole operation occupied half an hour, and very little blood was lost. Three weeks later the patient was able to leave her bed, and already new bone might be felt in process of formation within the periosteum. Recovery after this was retarded for a short time by an attack of bronchitis and by some suppurating cervical glands; but in the end she left

the hospital quite well, and with very little disfigurement. The tumour was of a fibro-plastique character.

Art. 96.—*On mechanical injuries to the Eyeball.* By Mr. Haynes Walton.

(*Medical Times and Gazette*, March 12, 1859.)

Mr. Walton's observations are chiefly against meddlesome examinations in cases of this kind:

"Effusion of blood," he remarks, "is the common consequence of a severe injury to the eyeball. It always exists when there is rupture of the external coats, and the danger of its presence is in proportion to the quantity effused in the posterior part of the eye.

"Adaptation as nearly as may be of divided parts—slight sustaining pressure—local and general rest—are the things indicated, and the objects to be accomplished. When I see a patient sufficiently soon after an injury, I make no further examination than is needed to ascertain its nature, to be assured of the line of action required, and to be able to form a tolerable prognosis. Taking care to exclude all extraneous substances, I close the eyelids, and retain them shut by one or two strips of court plaster, which fulfils the first two indications—adaptation and slight sustaining pressure, with the great addition of excluding the atmosphere. When the accident is severe, I enjoin rest of body and disuse of the other eye. The quicker the union of the wound, the more certainly is the desired object gained, the more perfect the result, and the less the suffering.

"It is positively hurtful to apply stimulating lotions. Swelling of the conjunctiva, chemosis, as it is called, is the inevitable result of an injury, and readily passes away. The frequent use of cold water, or a cold lotion applied with a rag sufficiently thin to allow of evaporation, is most advantageous, and if much pain exist, the addition of some preparations of opium will generally afford relief. Sometimes warm applications are more grateful, so that the use of ether must often be discretional.

"I resort now more frequently to the internal use of opium than in the earlier years of my practice, but I give it in very small quantities, and repeat the dose often; so that although in the end I might prescribe as much, I am sure that I obtain a far better result. I affect the patient's system sufficiently, and keep it so influenced, without that knock-down prostrating result so likely to follow the large dose. I have met with cases in which nothing short of the local abstraction of blood would give ease.

"I learned in the operations for the extraction of cateract and for artificial pupil, how much is to be gained by not opening the eye for a least a week after it had been incised, and that knowledge I apply here. I am wholly unaware of a single object that is to be gained by an earlier inspection, or one from day to day, as have been advocated by some surgeons. If matters are doing well it is not needed, and if any untoward events supervene, their existence is always manifested in appearances of the upper eyelid, and then it is, more than at any

other period, that opening the eye is likely to be hurtful. Usually I do not remove the plaster for a week, and then I prefer that the patient should, of his own accord, and after the tarsal margins have been duly cleansed, open the eye. The act is then devoid of suffering. The application of the surgeon's finger is very apt, where there has been much lesion, to produce pain, and that often of long duration.

"But what is to be done when the iris is more or less prolapsed through the cornea, or perhaps through the sclerotica? The latter state is the more common. The sclerotica is more easily ruptured than the cornea, and the giving way is generally close to the attachment of one of the recti muscles. Most assuredly, as a rule, the less that is done the better. But very seldom, indeed, can it be necessary to interfere. I have a very few times thought it prudent, from the amount of the prolapse, from the very large bit that was hanging out, and to lessen irritation, to reduce the flap with a pair of scissors; but I repeat, that in general nothing of the kind is needed. By a natural and a safe process, whatever is superfluous and not wanted in the progress of plugging and cicatrization is removed. The application of nitrate of silver cannot be beneficial. I know that it destroys primary cicatrization, and besides, increases inflammatory action, so that it is doubly hurtful. I say this after much investigation of the subject and a thorough conviction. In ulceration of the cornea the iris often protrudes in a bladder-like form, being pressed forwards by the aqueous humor. It is often advantageous to puncture the protrusion and produce collapse. I have not, so far as I remember, met with a parallel example from an injury.

"Constitutional treatment must not be neglected, and all measures likely to reduce chronic inflammatory action, I include even mercury carefully and judiciously given, must be adopted if a case calls for it."

Mr. W. properly cautions the surgeon not to let any extent of injury, short of actual collapse, destroy hope of restoring the eye to some degree of usefulness.

Art. 97.—*On a peculiar form of Sclerotitis.* By Dr. R. Hibbert Taylor, Surgeon to the Liverpool Eye and Ear Infirmary.

(*British Med. Journal,* Sept. 10, 1859.)

Dr. Taylor's attention was first drawn to this affection by some remarks of Mr. Dalrymple on the 'Pathology of the Human Eye,' and his first notice was published some years ago in the first volume of the 'Edinburgh Medical Journal.' Several additional examples of the disease have since fallen under the author's notice, and the present paper is to give a resumé of his present knowledge on the subject.

"The disease seems to consist, as I think Mr. Dalrymple correctly observes, in a primary circumscribed inflammation of the sclerotica, which tends to spread *outwardly* to the subconjunctival cellular tissue, and *inwardly* to the structure of the choroid and corpus ciliare. It is attended with the deposition of a whitish matter, probably tubercular, in the tissues above named; and at a more advanced stage of the disease, the cornea is apt to become the seat of opacities varying in

size and density. The attendant vascularity occurs in detached patches, assuming somewhat of the fascicular form observed in pustular conjunctivitis, and is generally seated on the upper and outer side of the cornea towards the external canthus.

"The larger trunks subdivide into numerous smaller twigs at a short distance from the margin of the cornea, enclosing an area of a circular or ovoid figure; within this space several conical-shaped bodies are seated, separate from each other, of reddish colour at the base, and white or yellowish-white at the apex. They are of firm consistence, and evidently connected with the subjacent tissues, as they cannot be moved with the finger. The textures surrounding them are generally somewhat thickened and elevated; and the appearance is not unlike what we might suppose to arise from the deposition of some solid matter in the substance of the sclerotica and subconjunctival cellular tissue. The cornea is usually, though not always, the seat of some opacity. These opaque patches vary in form, extent, and density. They generally occupy the side of the cornea nearest to the thickened sclerotica, and are either separated from it by a clear strip of cornea, or, as more frequently happens, are united to it; presenting the appearance as if the opaque texture of the sclerotica had advanced upon the cornea. In some instances, where this union was only partially developed, minute red vessels could be distinguished, running apparently upon the internal surface of the cornea, and extending from the thickened portions of the sclerotica and corpus ciliare towards the corneal opacity.

"In one instance, and only one, I have observed the cone-shaped bodies ulcerate upon the apex and discharge their contents through the aperture there formed. This process was followed by rapid sinking of the elevations, and a marked decrease in the surrounding vascularity.

"The movements of the *pupil* are usually sluggish, or almost wholly suspended, in the early stage of the disease; and at a more advanced period, it is apt to become irregular, and displaced from its central position toward the seat of the disease in the sclerotica.

"*Pain* is of a variable character, being usually slight in degree, sometimes amounting only to a sensation of tenderness on pressing the eyeball, or a feeling of stiffness on rolling it from side to side, or in exercising the eye much by artificial light. In other instances, again, the pain is more marked, consisting of a darting sensation in the eyeball itself, with sharp lancinating flashes extending upwards to the eyebrow and the side of the head, and down along the side of the nose to the chin.

"*Vision*, in general, is impaired to a greater or less degree. Where opacities to any extent exist upon the cornea, it must, of course, be imperfect; but independently of this, it is usually defective, and liable to become more so when the eye is used for any length of time. In one case recently seen, the patient stated that all objects appeared for a time of a bluish cast, which was followed by the sudden appearance of flashes of light of reddish colour.

"*Watering* of the eye generally accompanies this defective state of vision, and is increased by anything which tends to promote vascular

congestion, as walking against a wind, or exerting the eye in looking at minute objects.

"With regard to the persons most liable to attacks of this disease, it seems to affect females more frequently than males, usually young adults, and those especially of a strumous habit. One eye is usually attacked rather than both, although it may appear alternately in each; and when one is the seat of the disease, it may affect both sides of the eyeball simultaneously, or commencing on one side of the cornea, may gradually travel round its entire circumference, disappearing in one spot as it is developed in another.

"One of the most characteristic features of the disease is its chronic obstinacy. Its first development is generally slow and insidious. Commencing with slight redness in one portion of the eyeball, which is at first intermittent, moderate lachrymation, and some uneasiness occasionally amounting to pain, and varying dimness of sight; it gradually steals on, till at length the patient becomes conscious that there is something materially wrong with his eye, from observing an opaque spot upon the cornea, or finding that he can no longer use the organ as before.

"So much is this the usual subtle course of the disease, that we not unfrequently find, on close examination, that its commencement dates several months previous to the time when the patient first applied for medical advice. Of eleven cases, minute details of which I have preserved, three occurred in males, and eight in females. Their ages ranged from fifteen to sixty years, seven out of the eleven being under thirty-one. In all of these instances, with a single exception, the disease was confined to one eye only; affecting the right eye in six cases, and the left in four. In eight instances, it was confined to one side only of the eye attacked, and that generally the inner; and in three, it affected both sides of the cornea. The disease attacked the eye for the first time in eight cases, for the second time in one, for the third in one, and for the fourth in one; while the duration of the attacks in these different instances varied from three weeks to four years.

"With regard to the intervals of the time which elapsed between the different accessions of the disease in those who suffered more than one attack, and the season of the year when they occurred, it may be observed that, in the person who suffered two attacks, the first occurred in April, and the second in November of the same year. In the case of the three attacks, the first occurred in the winter of 1854, the second in the winter of 1855, and the third in the autumn of 1858; while the patient who suffered four attacks was affected first in March, and second in October, 1853; for the third time, in July 1858, and finally in May 1859.

"As regards the immediate cause of this disease, I have nothing very definite to state. Seven out of the eleven cases occurred in persons whose general health was more or less disordered at the period of the attack, and one of these suffered likewise from otorrhœa. In one instance, it was attributed to exposure to cold; and, in another, the symptoms were said to have been aggravated from a similar cause; while in two examples no cause was apparent, or could be assigned.

Upon the whole, I think we may regard this disease as furnishing another example of those many and various local affections which date their origin from constitutional causes, and which must be looked upon as indicating an unhealthy condition of the system at large.

"The only other ophthalmia with which this form of disease may be confounded, and it is a mistake not likely to be made by any one familiar with the pathology of the eye, is pustular inflammation of the conjunctiva. Both occur in young adults, and both are characterised by a fasicular arrangement of blood-vessels occurring in detached bundles, and running towards and subdividing around a common centre. In pustular ophthalmia, however, the point of attraction is a pustule or vesicle, seated in the conjunctiva, and in some degree moveable with this membrane; generally of a rounded figure, with a flattened apex, and either filled with a semi-opaque fluid, or at a more advanced stage, forming a shallow ulcer. These appearances are very unlike the firm, immoveable cone-shaped body, seated upon a dense thickened base, and described as characteristic of the disease under consideration. Pustular ophthalmia, in addition, is rarely accompanied with dense opacities upon the cornea, or with any indication of inflammatory action in the tissues of the sclerotica, iris, and choroid, such as we see in the other form of disease.

"From what has been already said with regard to the development and progress of this affection, it will readily be understood that the prognosis is not likely to be of a very cheerful or encouraging character. In any case, the improvement is likely to be slow, and the more so in proportion as the disease has existed for a longer period. When the disease is limited mainly to the sclerotica, and to the tissues immediately above and beneath, we may anticipate a return to health under appropriate treatment; but, should the cornea have become the seat of large and dense opacities, and if, as may be anticipated in such circumstances, the textures of the choroid and corpus ciliare are also implicated, the result, under any treatment, is not likely to be so favorable; and, should we succeed in arresting the progress of the disease, the eye will probably remain permanently altered* in structure, and vision more or less impaired."

ART. 98.—*On the removal of the acute pain of Glaucoma by operation.* By Mr. HAYNES WALTON, Surgeon to St. Mary's Hospital, &c.

(*Medical Times and Gazette*, July 16, 1859.)

"A female, in middle age," writes Mr. Walton, "was sent to me in private by Mr. Wall, of Paddington, with acute glaucoma of the left eye, which was very tense, much injected, the pupil dilated, and the iris pressed forwards by the semi-opaque lens. Vision was quite lost; and I was consulted solely on account of the severe suffering, sometimes lasting for several consecutive hours, but more generally

* In seven out of eight cases, vision was not ultimately impaired beyond slight dimness, accompanied with irritability of the eye, and inability to use it in reading or writing, except for very short periods. In the other case, the sight was never very defective, and ultimately became good.

in paroxysms, which nothing has been able to subdue. The extreme vascularity of the eyeball, and the general plethora, induced me to order cupping to the temple, and purgatives. Not the slightest benefit ensued. Opiates, both locally and generally, were then tried, with no more effect than securing better nights' rest than hitherto, but the general health was deranged by the narcotics, which were discontinued. Other drugs were administered in vain. Thus, after a period of five months, the patient got no material benefit either from myself or from any other surgeon by whom she had been treated, and she had applied to several. She expressed her desire to submit to any operation likely to afford relief, and she was the more anxious as the right eye was certainly sympathetically affected, as manifested by intolerance to light and lachrymation. Rather than extirpate the eyeball, a practice that my patient had heard of, and which is certainly very objectionable if it can be avoided, or rather than reduce it by the removal of the anterior portion, an operation that is very serviceable in checking certain morbid actions, and which should, when applicable, be preferred to the above, I determined to try the experiment of extracting the opaque lens, and evacuating some of the vitreous humour I effected this without wounding the iris. The vitreous humour was apparently quite normal.

"The acute pain ceased, and there was less uneasiness during the healing process, which was quickly effected, than is often experienced in successful operations for the extraction of the cataract. It is just five weeks since I operated. There has been no recurrence of pain; there is yet conjunctival vascularity; there is no other abnormal appearance about the eye, except that the pupil is irregular, a part of it being adherent to the corneal wound, but there is no prolapse. The right eye has lost the sympathetic irritation.

"I desire not to set more value on a single example like the present than it is worth, nor do I attempt to generalise from a single instance; but even as a unit, as an isolated fact, it has its value. It will encourage me to investigate the matter further, and I doubt not that with this publicity the subject will receive attention from others. I shall not attempt to explain the rationale of the operation, nor do I venture to speculate on any advantages that may be gained by this means when adopted in the earlier stage of the disease. My object is to record an experimental success in the removal, by a simple plan, of a distressing symptom that will not at all times succumb to any ordinary treatment, except that which mutilates or disfigures. I can affirm, from personal experience, that Græfe's iridectomy does fail in these instances.

"The tendency to internal hæmorrhage, when a diseased eyeball is incised, is well known; and I adopted the generally successful preventive of applying a pledget of cotton wool and a bandage over the eye, and retaining it two or three days. No bleeding occurred."

Art. 99.—*New operation for the relief of pain in Acute Glaucoma.* By Mr. Hancock, Surgeon to the Royal Westminster Ophthalmic Hospital, &c.

(*Lancet*, Oct. 29, 1859.)

Case.—Arthur H—, æt. 15, a tall, tolerably healthy-looking youth, was admitted on the 8th ultimo. When he was five years old, he was hacking a mutton bone with a knife, when the latter slipped and wounded his left eye. From the effects of this accident he was confined to the house for some time. The pain soon subsided; but the sight of the eye was destroyed. There was no apparent breach of continuity. No pain recurred until May last, and then he noticed that the eyeball began to enlarge. He applied as an out-patient on the 7th of July. At first, by the treatment adopted, the pain was relieved; subsequently it remained stationary at one point of intensity. It has become worse since, swelling of the eyeball has been increasing. The pain is slight if the globe be still; but by the slightest movement or pressure, violent aching is occasioned. It was feared that the other eye was becoming sympathetically affected; and he has been overtaxing it lately by writing.

Condition of the eyes.—The right healthy; sight good. The left swollen to about twice the size of the normal eye; sclerotic vessels dilated; choroid not showing through the sclerotic; pupil dilated extremely, slightly irregular. Masses of the capsule of a disorganized lens are visible. The enlargement of the whole globe is uniform. He complains of great pain when the eyeball is touched, which feels very tense and hard to the finger.

Operation.—On the 9th of September, Mr. Hancock introduced a Beer's cataract knife at the junction between the cornea and the sclerotic, the blade being inclined downwards, the point proceeding inwards and backwards. The place of puncture was the commencement, on the outer side, of the lower semi-circumference of the cornea. The point of the knife, now having traversed obliquely the layers of the cornea, was pushed backwards towards the interior of the globe, thus dividing the ciliary ligament in a portion of its extent. On the removal of the knife, a quantity of discoloured fluid escaped.

Mr. Hancock, considering that the great pain was due to tension of the iris and ciliary ligament by accumulated fluid, the product of the disorganized parts behind, believes that all the indications for the relief of the suffering will be fulfilled by this operation. And its advantages are:

1. By the situation and oblique direction of the incision, a free drainage of the fluid is provided for.
2. The iris is very slightly wounded.
3. The pupil is preserved, of its original size, and in its normal situation.
4. The operation is very simple, and is performed very quickly.

Sept. 10th.—Except for an hour or so after the operation, the patient has suffered no pain. The operation gave relief. He has slept perfectly well; before this, he has been frequently awakened by the pain induced by pressure on the eyeball from turning in bed.

11th.—Eye perfectly easy during the whole day.

12th.—Not the slightest pain, even on considerable pressure; the eyeball feels much less tense; the pupil is less dilated; no prolapse of iris through the wound.

21st.—Has gone on uninterruptedly well since last report; there has not

been the slightest pain; the size of the globe has sensibly diminished; the pupil is far less dilated than it was before the operation; and the globe, instead of being hard and resisting, now easily yields to the touch: pressure upon it occasions no pain.

ART. 100.—*Three cases of Orbital Aneurism treated by tying the common Carotid.* By Mr. NUNNELEY, Senior Surgeon to the Leeds Eye and Ear Infirmary.

(*Proceedings of Royal Medical and Chir. Soc.*, vol. iii, No. 2, 1859.)

After mentioning the rarity of the affection, the author alludes to those few cases which have been recorded, of which four have been brought before this Society, and are published in its 'Transactions.' Two of these cases were not only the earliest but amongst the most interesting that have been related, and for a great number of years they stood alone. They are those of Mr. Travers in the second volume, and of Mr. Dalrymple in the sixth volume. Many years afterwards Mr. Busk reported a case of his own, and also mentioned another, treated by Mr. Scott, in the twenty-second volume. Two cases occurred in Paris in 1839; one to Velpeau, and another to Jobert. Mr. H. Walton has published a case of an infant, in which he operated; and three other cases have occurred in America, where Dr. Van Buren operated in a case of traumatic aneurism of the orbit in a young man, who had also symptoms of a fracture of the base of the skull, and Drs. V. Mott, and J. R. Wood, have each tied the carotid for a case of integumental nævus extending into the orbit. There are also three other cases of doubtful nature, mentioned by Dupuytren, Schmidt, and Frere, of which one, however, if not more, are quite as likely to have been malignant disease as aneurism. As three cases have lately come under the author's observation, in all of which the common carotid artery has been tied, he has thought them not unworthy of being brought under the notice of the Society. Since Mr. Travers first declared the disease to be an aneurism by anastomosis it has commonly been so regarded, but from which opinion the author dissents. The reason for which he gives, after narrating the cases themselves.

The first case occurred in a healthy man, æt. 31 years. The early history and origin of the complaint were at first very obscure; made purposely so by the patient to conceal the true cause of it—a hard blow upon the left eye in a drunken midnight fight. At first there was some protrusion of the ball, congestion of the conjunctiva, and dulness of vision, but no pulsation. It was suspected a chronic abscess or serous cyst might be forming deep in the orbit. The eyelids gradually became much congested, swollen, and lobulated, as though about to burst. A minute puncture, followed by considerable effusion, clearly showed the distension to be caused by blood. Subsequently aneurismal thrill and pulsation were detected. As pressure on the carotid at once arrested these, and allowed the protrusion and

vascularity of the eyeball to subside, the artery was tied, with the effect of immediately removing some, and materially diminishing all the symptoms. The brain was unaffected on the tightening the ligature. The patient progressed most favorably until the twenty-fourth day after the operation, when, without any assignable cause, the symptoms somewhat returned, but were soon checked by venesection and purgatives. In a month he had returned to his work, the ligature being still fast on the artery. After continuing at it for the space of three weeks, suddenly, without, as he then said, any known cause, during the night the injection, protrusion, and pulsation in the eye returned to such a degree as to render consideration what further should be done necessary. The propriety of extirpation of the contents of the orbit, the ignition by a battery of wires passed into the orbit, the introduction of threads or wires coated with nitrate of silver or sulphate of copper, the injection of perchloride of iron or tannin, and the ligature of the other carotid were discussed, and the latter plan determined upon, if depletion did not succeed. Repeated venesection, purgatives, low diet, cold to the orbit, and upright position, were rigorously adopted with the best effect. The symptoms all subsided, when, before the cure could be said to be complete, the man was put into gaol, and subsequently lost sight of for some weeks. He then worked hard as an excavator and house-breaker, for which he was sentenced to penal servitude. When seen during the last month in Wakefield prison, it was found the sight of the eye was lost; but in every other respect he was perfectly well. He then voluntarily stated he had only himself to blame for the recurrence of the symptoms, as on the first occasion he clandestinely left the house on a very cold day, walked some distance, and eat and drank freely; and on the second, he had been out all night poaching. The ligature did not come away until ninety-six days after the operation.

In the second case a man, æt. 38 years, the affection came on without any assignable cause. It had existed many months. The operation was perfectly successful, and he returned to his work, as a weaver, in a month after it. In him, also, while wheeling a barrow, there was a sudden renewal of some of the symptoms, which however a few days' rest removed, and when seen, twelve months after the operation, the eye was perfect; a little bogginess of the lids being the only vestige of the affection.

In the third case a woman, æt. 65 years, the disease, "suddenly as the crack of a gun," came on while she was stooping to take off her shoes. It was attended with more pain and more active symptoms than the other two; the pain in the head and eye was most distressing. The operation was a difficult one. The neck was short and thick; there was a large bronchocele, with many congested veins; and the carotid divided unusually low in the neck. There was some hæmorrhage from an unseen vessel. The brain was seriously affected on the tightening of the ligature. There was convulsion of the same side of the body, and partial paralysis of the opposite. The local symptoms, however, disappeared instantly. She sank on the sixteenth day after the operation, having had repeated losses of blood from the wound. There had been paralysis, more or less complete, of the right side of

the body, with constant partially controllable movements of the left side, difficulty of speech, and some impairment of intellect.

On examination of the body, forty-eight hours after death, the external appearance of both eyes was the same. The brain was very pale, containing very little blood; but, so far as can be judged, the same on both sides. There were no signs of recent inflammation or effusion, but there was old general thickening of the arachnoid membrane. The right hemisphere of the brain was of a natural firmness, the left was soft, and in the lower part of the middle lobe, just over the entrance of the carotid artery into the cranium, was a patch as large as a hazel-nut, quite broken down. The carotid artery, on its emergence from the bony canal, was enlarged and surrounded with a small coagulum, which involved the origin of the ophthalmic branch. This latter vessel was enlarged, and its coats diseased, as were its continuation to the inner side of the orbit, and the lachrymal branch: these were filled with coagulum; all its other branches were so small as hardly to be seen. There was nothing like aneurism by anastomosis in the orbit. All the cranial arteries were very patulous, and studded with atheromatous and earthy deposits.

The ligature had been securely placed upon the carotid, but somewhat near its bifurcation; below the vessel was well filled with coagulum, and the sheath, as low as the sternum, consolidated with fibrin; but above the ligature the vessel and all its branches were quite open, there being neither coagulum nor fibrin. The bronchocele extended nearly to the sternum. The parts were placed upon the table, and also drawings of the appearance of the eyes just previous to the operation in all the three cases.

The author then comments upon the nature of the affection, stating the points in which, in its origin, progress, symptoms, and treatment, it differs from aneurism by anastomosis, and expresses his conviction that it is an error so to call it; that, in reality, it may be true aneurism, or false circumscribed, or diffused aneurism, either within the orbit, or of the carotid within the cranium, near to the origin of the ophthalmic branch.

It is remarked that all these cases occurred on the left side, and that amongst those reported, which had arisen spontaneously, the majority were on the left side and in women, while those which supervened upon local injury were, as might be expected, most common in men, and on either side. The cases were, however, too few to justify more than calling attention to the fact, which may be only accidental, and be reversed on examination of a greater number.

ART. 101.—*All the capital signs of Orbital Aneurism without Aneurism or Erectile Tumour.* By Mr. HULKE, Assistant-Surgeon to the Royal London Ophthalmic Hospital.

(*Ophthalmic Hospital Reports*, No. 7, April, 1858.)

The great importance of this case in the history of this rare and obscure disease is the author's apology for presenting it at length. Bruit, pulsation, protrusion of the eyeball—in short, all the physical signs of

orbital aneurism were present in a marked degree, yet no aneurism or erectile tumour existed. How much doubt this case throws on many of the recorded examples of aneurisms of the orbit! It has been a common custom to speak of such cases as aneurisms by anastomosis; but this, in the majority of instances, is not their true nature. An analysis of twenty-one cases shows that they range themselves in two distinct series; the first comprising aneurism properly so called, true and diffuse; the second aneurisms by anastomosis, or erectile tumours. The former series is much the larger; and indeed the age at which the disease is most frequently met with, the suddenness with which the symptoms appear, often immediately following a blow or other direct violence, all point to aneurism proper in contra-distinction to erectile tumour. This has been strongly insisted upon by Mr. Nunneley, of Leeds, in the article immediately preceding the present one. But the present case does not come under either category; for neither aneurism nor erectile tumour was present; yet, had the woman recovered, no doubt would have been thrown on its nature, and the case would have been adduced as another instance of orbital aneurism, cured by ligature of the carotid artery. It is difficult to explain the aneurismal symptoms by the pathological appearances, which were those of phlebitis of the cavernous, transverse, circular, and petrosal sinuses. The internal carotid artery may have been partially compressed by the swollen walls of the cavernous sinus against the side of the body of the sphenoid bone giving rise to the bruit, which would have a good conducting medium in the cranial bones. The plugging of the trunk of the ophthalmic vein, where it joins the cavernous sinus, by obstructing the return of blood from the orbit, accounts for the protrusion of the eyeball, and, perhaps, also for the pulsation which was felt when the fingers were laid on it; because each diastole of the ophthalmic artery must have been attended by a general momentary increase of the whole quantity of blood in the orbit, because its exit through the ophthalmic vein was cut off, and the resisting bony walls of the orbit could permit a distension in front only. The healthy state of the internal carotid artery and its branches, and of the internal jugular vein, preclude the idea that the pathological changes in the cranial sinuses commenced subsequently to the deligation of the common carotid. This operation was performed in fifteen of the twenty-one cases alluded to, and the result in eleven instances was satisfactory. Two cases were recently cured by digital pressure on the common carotid artery, by Gioppi, and Vanzetti, of Padua.

Case.—A woman, æt. 40, of irregular, dissipated habits, was admitted, February 19th, 1858, into King's College Hospital, under the care of Mr. Bowman, with symptoms supposed to depend on orbital aneurism. Five months previously, in a scuffle, she was struck with a fist on the left side of the head and temple. The blow knocked her down. The next day she felt severe pain in the left temple, about one inch in front of the ear. The pain was aggravated when she moved about and when she stooped; it disturbed her sleep. After a fortnight it subsided, but was replaced by a rushing noise, like the beating of a steam-engine, on the same side of the head, at first towards the occiput, but latterly in front of the ear and temple. The noise was con-

stant, and increased when the heart's action was quickened. She said that, since first heard, it had gradually increased in loudness. The noise had been heard by her husband ever since three weeks after the accident. A month before her admission into the hospital, she found her sight "bothered" when she looked at an object with both eyes. A fortnight after this the left eye became red and sensibly projected. The subjoined memorandum was made on her admission.

"General fulness of the left orbital region, with prominence of the eye, which is congested. The pupil dilated but active. Sees distant objects perfectly, but is unable to read. The angular vein and one over the outer edge of the orbit are dilated. There is an abrupt depression in the lower border of the orbit at the articulation between the malar and upper maxillary bones. A loud sibilant bruit can be heard extensively over the left side of the head, but it is most intense above and in front of the ear. This sound is synchronous with the beating of the heart. A similar bruit is heard along the course of the great cervical vessels as far down as the common carotid artery. The fingers being placed upon the left eye, when the lids are closed, pulsation is plainly felt, and the fingers are seen to rise and fall with it; a loud bruit is also heard when the stethoscope is placed on the front of the globe. Head symptoms, as giddiness and loss of memory, have never been present. The irregularity of the lower border of the orbit seems to have resulted from a blow received three months after the first injury."

All these symptoms plainly pointed to the existence of orbital aneurism, and as they were manifestly increasing, Mr. Bowman decided to tie the carotid artery. This was done on February 27th, the patient being under the influence of chloroform. The operation was accomplished without difficulty and with the least possible interference with the adjacent structures. The sheath was opened only just sufficiently to allow the passage of the aneurism needle. The internal jugular vein and pneumogastric nerve were not seen. The vessel was tied a little higher than was originally intended in consequence of a large vein running across the line of the wound. Immediately on tightening the thread all pulsation was arrested in the vessel and its branches above. The pulsation and bruit hitherto felt and heard over the front of the eye at once ceased. On recovering from the effects of the chloroform she was sick, and stated that she still heard the noise in her head, but faintly; it could not, however, be heard by other persons. Next day she complained of great throbbing in the right side of the head, and in the left side of a sound like the noise of a drum a long way off. The eye was less prominent, and less congested, and she spontaneously said that her sight was no longer "bothered." During the next week she was much distressed by cough, with a free bronchial expectoration, to which she had been liable for two years past. On the 7th, the wound, which had nearly healed, assumed a phagedenic appearance. A distinct bruit could be heard over the front of the eye, and also over the left forehead, but more faintly. Just in front and a little above the ear, on the same side, a continuous musical note of rather a high pitch, swelling out at each pulsation, could be heard. There was little change in the nature of the sound as heard by herself, though at times it was rather more intense. Above the point of ligature no pulsation could be felt in the carotid. The phagedenic ulceration spread, and the discharge from the wound was unhealthy. The tongue became furred, dry, and brown. On the morning of the 10th, at two o'clock, there was slight oozing of blood from the wound; two hours afterwards it recurred to the extent of a couple of ounces, and seemed to come from the upper angle. It was readily checked by slight pressure.

The hæmorrhage recurred twice during the next twenty-four hours, and she had a severe rigor. The ligature separated without bleeding on the evening of the 11th, thirteen days after the vessel was tied; but on the following morning at four o'clock, free hæmorrhage took place. It was repeated several times during the next four days. The blood welled up in a full stream from the bottom of the deep sloughy wound; slight pressure always arrested it at the time. Graduated compresses, moistened with perchloride of iron, were employed. It seemed probable that the bleeding came from the upper end of the vessel. The left eyeball again became prominent; the pupil was dilated and motionless; the eye was everted; and there was ptosis of the upper lid. No pulsation could be felt over the eye. A free gush of blood took place during the visit on the 15th. With some difficulty Mr. Bowman struck a tenaculum through the spot from which the blood seemed to pour; the tissues were tied with complete arrest of the bleeding. She became weaker; was at times greatly excited, and at length died on the 17th.

Post-mortem appearances.—Permission was obtained to examine the head and neck only. The skull cap and dura-mater having been removed, the visceral layer of the arachnoid was found to be slightly opaque, owing to a little serum in the meshes of the pia-mater. The brain and all its vessels were quite healthy; the descending horn of the right lateral ventricle contained two drachms of serum; the other cavities were empty. The pituitary body was swollen, congested, and coated with lymph. The dura-mater being the floor of the sella turcica and the posterior clinoid processes, together with that corresponding to the cavernous, transverse, superior, and inferior petrosal sinuses, was congested and coated with a layer of lymph, which was sprinkled with small dots of blood, but no vessels could be detected in it with the microscope.

The dura-mater forming the outer wall of the cavernous sinus was swollen and softened, and the third nerve imbedded in it was greatly swollen and bathed in serum; the Casserian ganglion, and the nerves proceeding from it, were in a similar condition. The cavity of the sinus contained a puriform fluid, which, on close examination, proved to be softened and disintegrated coagulum. The transverse sinus was filled with an old clot, the outer part of which was firm and adherent to the wall of the sinus, but the centre had a tawny brown colour, and a pulpy consistence. This grumous pulp was mainly composed of cells, having the appearance of pus corpuscles, but wanting the characteristic nuclei on the addition of acetic acid. Small masses of orange-brown pigment were mingled with these cells. The circular sinus was filled with similar matter. A slender decolorized clot extended from the cavernous sinus for a short distance into the superior petrosal. The superior petrosal sinus, in its whole extent, was filled with softened clot. The vascular foramina on the surface of the body of the sphenoid and tip of the petrous portion of the temporal bone were dilated; a section of these bones had a rather brownish colour, but they were not soft or carious. The double bend of the internal carotid artery resting against the side of the body of the sphenoid bone, together with the carotid and cavernous plexuses of the sympathetic nerve were bathed in ichorous serum, but the artery itself was not dilated, and its inner surface had a perfectly healthy appearance. The ophthalmic artery and its branches were traced with great care, they were not at all dilated, nor more numerous than usual. The infra orbital branch of the internal maxillary artery was not enlarged; the antrum was healthy. The malar was detached from the upper maxillary bone and displaced slightly upwards. This was the only change in the wall of the orbit. The ophthalmic vein seemed much enlarged and had the appearance of a varix. By comparing it with the vein

of the other orbit, the enlargement was seen to be due to thickening of its coats, and not to any dilatation of its calibre. Where the vein opened into the cavernous sinus it was obstructed by a softened, degenerated clot, similar to that in the sinus; this clot stretched along the trunk of the vein into the orbit, but here, and in the tributary branches of the vein, it was evidently of more recent date than that which blocked the mouth of the vein at the cavernous sinus.

The ligature had been placed upon the common carotid artery, a little below its bifurcation; the divided ends of the vessel were three-quarters of an inch apart. The external and internal carotids were patulous and empty; the lower portion of the common carotid trunk from the point of deligation downwards to the root of the neck was filled with pulpy, grumous clot, which oozed out from the patulous open end during the removal of the parts. At the root of the neck the vessel was completely closed by a thin, membranous, decolorized coagulum, which formed a perfect septum; below this the carotid had a perfectly healthy aspect. That portion of the vessel containing the decomposed grumous clot, had a dirty-brown stain, and its inner surface was flocculent from adhering shreds of fibrine, but was not otherwise altered. The external carotid and its branches were healthy and empty. The internal carotid artery upwards to the base of the skull and in the carotid canal was healthy: not dilated, and its inner surface smooth and of a natural colour. In the upper part of its course it contained a slender, fibrinous clot, a mere thread, which occupied only a slight portion of the calibre of the vessel. The internal jugular vein was healthy, it contained a slender, decolorized clot, reaching from the root of the neck to the base of the skull, and a similar clot was found in the left lateral sinus.

Art. 102.—*Strabismus of one Eye cured by an injury which caused the loss of the other Eye.* By Dr. Colson, Senior Physician to the Hospital of Noyon.

(*Gaz. Hebdom. de Méd. et Chir.*, July 22d, 1859.)

The practical conclusion to be drawn from this interesting case is this—to keep the stronger eye closed for two or three months, and in this way to necessitate the exercise of the weaker and squinting eye. Thus exercised, in Dr. Colson's opinion, the probability is that, without any other kind of treatment, the weak eye will have acquired power and lost its squint, when the bandage is removed from the other eye.

Case.—Lefebvre (Arcade), æt. 7, living at Varesne, near Noyon, and suffering from convergent strabismus of the right eye. The pupil is almost hid within the inner angle of the eye when the left eye is open, but when the left eye is shut the right eye loses its convergent squint. The sight of the right eye is very defective—a fact which appears to arise from the other eye being always used for purposes of vision. Dr. Colson recommended exercise of the weak eye by closing the stronger member, but the parents soon got tired of this mode of treatment, and nothing further was done until an accident did for them what they were unwilling to do for themselves. This accident occurred on the 17th of April, 1859, the child then being nearly twelve years of age. At play with other children, an arrow struck him in the left eye, and caused the complete destruction of this organ. This necessitated the use of the right eye, and nothing could be more rapid and satisfactory than the

results. From the time of the wound the squint disappeared, and before the end of two months, the eye, which at first was scarcely able to do more than distinguish between light and darkness, was able to read ordinary print.

Art. 103.—*Recent Strabismus cured by removing a piece of necrosed bone from a whitlow.* By Mr. Hulke.

(*Medical Times and Gazette*, Jan. 29, 1859.)

The influence of peripheral sources of irritation upon the nervous system is well known. Teething and convulsions, lumbrici and epilepsy, are familiar examples as regards the great centres themselves. Instances of the sympathetic affection of single nerves, or of isolated groups of muscles, although less frequent, are by no means uncommon. Strabismus in young children sometimes supervenes, apparently in connexion with worms. The subjects of the curious manifestations of nervous sympathy are, however, almost always either children or delicate women, in whom the cerebro-spinal system is peculiarly susceptible. The following case exemplifies the occurrence of a squint, in an adult man, seemingly in consequence of the irritation caused by a whitlow. At any rate, the squint came on coincidently with the necrosis of the terminal phalanx of one finger, and was wholly cured by the removal of the dead bone.

Case.—Owen J—, æt. 37, applied at the Royal London Ophthalmic Hospital, September 24th, 1858, for advice about his left eye. He gave the following account of his case:

Seven weeks previously, a whitlow came on the last phalanx of the thumb of his left hand; this was followed by inflammation of the lymphatics, and the gland above the elbow and those in the armpit became enlarged and very tender. The whole arm was very painful. While the limb was in this condition, one morning, on getting up, he found that he saw double, and had a squint in his left eye: this induced him to come to the Ophthalmic Hospital. It was found that he had complete paralysis of the outer rectus muscle, and could not turn the eye out beyond the middle line. He also complained of severe circumorbital pain. He was directed to poultice the whitlow, which had burst; to foment his arm, and keep it up in a sling, on the supposition that the pain about the orbit and the paralysis of the outer rectus might depend on periosteal inflammation. Iodide of potassium was prescribed, which he took till November 23d, without any improvement of the eye. The enlargement of the glands in the armpits and above the elbow, and the swelling of the arm, had quite subsided. A loose bit of dead bone could be felt through a sinus on the under surface at the end of the thumb. It was extracted with a pair of dressing forceps.

30th.—He states that all pain in the arm, and about the orbit, left him soon after the removal of the dead bone. The squint also disappeared. He can turn the eye out till the margin of the cornea nearly touches the canthus. It is only when he looks to his extreme left that he sees double.

Art. 104.—*On two modifications of the operation for Cataract.* By Dr. Von Graefe.

(*Allgem. Med. Cént. Zeit.*, xx, 1859 ; and *North Amer. Med. Chir. Rev.*, Sept 1859.)

One of the most common operations for cataract, that of extraction and the formation of a large flap, affords about ten favorable results in twelve cases; in one case only a partial restoration of sight is procured, and in the other suppuration of the eye is caused by loss of the flap. Division of the lens, which has been proposed as a substitute to the above method, is only applicable in cases where the lens is capable of being absorbed; when the nucleus of the lens is hard and yellow, it is apt to be followed by iritis, and must, under such circumstances, give way to extraction. In the operation of reclination the lens acts as an irritant, and produces internal ophthalmia, increase of intra-ocular pressure, excavation of the optic nerve, and amaurosis. The statistics of the operation show that vision is preserved in only one half of the cases. In old persons, therefore, extraction with the formation of a flap should be preferred to all other operations, which may, however, be used in exceptional cases.

The dangers of extraction are owing to the extensive flap of the cornea, on account of which comparatively little tissue is left for the supply of nourishment, which evil is further increased, and the mortification of the flap is favoured by the contusion produced by the lens on its escape. This latter difficulty is obviated by the linear section; but this is only applicable in cases of soft cataract, as in hard ones the frequent introduction of Daniels' scoop causes dangerous irritation of the iris.

In order to render the linear section applicable to a greater number of cases, Dr. Von Graefe has made the following modification: The linear incision is made in the sclerotica in such a manner as that the inner occupies the border between the sclerotic and cornea; the *iris is then drawn out and a portion of it snipped off, so as to form a broad coloboma.* A broad Daniels' scoop is pushed behind the lens, which, being broken up into small pieces, is removed, without fear of subsequent irritation of the iris. This operation is suitable to soft cataracts with a moderately large and hard nucleus, and is to be preferred in old persons, in whom the state of the constitution would give reason to apprehend mortification of the cornea in the flap operation of extraction. The coloboma, which has but little influence on the sight, should be made on the temporal side instead of above, where it would be less visible, but would, in this situation, render the different steps of the operation more difficult.

The second modification proposed by Von Graefe has reference to the operation of division of the lens. The operation consists in making an upward coloboma, eight days before the division of the lens. This preparatory measure has, as Von Graefe alleges, the advantages of being followed by less swelling of the lens, one of the dangers of the other operation; larger wounds can be made in the capsule, and absorption takes place more readily, being effected in

from four to six weeks, while in the simple operation of division it takes as many months.

ART. 105.—*Complete recovery after extraction of foreign body from Vitreous Humour of Eye.* By Mr. DIXON, Surgeon to the Ophthalmic Hospital, Moorfields.

(*Medical Times and Gazette*, March 26, 1859.)

CASE.—A healthy-looking man, æt. 24, by trade a cooper, applied at the hospital on the morning of December 2d, having just before received an injury to his left eye from a chip of steel, which broke off the edge of a chisel which he was using. A small wound, which had perforated the upper lid just above the margin of the tarsus, marked the spot where the metal had entered, and corresponding with this was one in the tarsal conjunctiva. There was a small gaping wound in the sclerotic, about a line distant from the upper edge of the cornea. It thus seemed probable that the fragment had lodged itself within the globe. The pupil was active, and the vision nearly perfect. On examining with the ophthalmoscope, a clot of blood was distinctly seen hanging down from the wound, and waving to and fro behind the lens. Just below the optic entrance was a small round body, resembling a globule of clear lymph. As the foreign body had not been detected, no operation for its removal could of course be thought of. The eye was treated in the usual plan, being covered with cotton-wool, and lightly bandaged.

A week after the accident, on making a second examination with the ophthalmoscope, Mr. Dixon discovered the foreign body. It had evidently been concealed behind the iris, as it floated suddenly in view during a quick turn of the head. Having been once found, it was seen with the greatest ease, as well without the ophthalmoscope as with it. It hung, pendulum-like, almost in the axis of the eye, suspended by two or three threads of clot, which had their attachment to the cicatrix of the wound above. It moved from side to side with the greatest freedom.

The important question as to treatment now arose. The man's vision, despite the injury the globe had sustained, and the presence of a foreign body in its centre, was almost perfect. Could it be expected to remain so? Was it not probable that the immunity from inflammation hitherto observed was due to the position of the foreign body suspended in the middle of the vitreous and at a distance from any sensitive structure? Was it not to be expected that the slender filaments, by which this immunity was secured, would before long give way? When they did so, and the bit of steel fell down on to the retina, would it not be certain to set up irritation? Taking all these circumstances into consideration, Mr. Dixon determined to at once attempt its extraction. Long examinations were made as to how best the foreign body could be kept in view, and finally it was decided to operate with the man sitting in a chair before a good light, the head being a little thrown back so as to let the object to be seized fall away from the lens. The lens, it must be borne in mind, was uninjured and perfectly transparent. The incision in the sclerotic was made below at a considerable distance from the cornea, and was large enough to allow of the free introduction of a pair of fine iris forceps of peculiar construction. The quantity of vitreous which escaped was not large. Some difficulty, owing to the impossibility of keeping the foreign body in sight, was experienced in seizing it, but at the third introduction of the forceps it was brought away in their grasp. It proved to be, as had been supposed, part of the edge of a chisel, and was a tenth of an

inch long, and weighed a quarter of a grain. Immediately after its extraction the lids were closed with plaster.

No undue inflammation ensued on the operation, and the wound rapidly healed. The lens had not been injured, and retained its perfect transparency. A fortnight after the operation the man could see to read small type. About a month later, when an ophthalmoscopic examination was made, the deep structures of the eye were found to be perfectly healthy, and the only remnant of the effects of the accident was a simple opaque filament floating in the vitreous.

Art. 106.—*On the Secale Cornutum in disturbance of the accommodation-power of the Eyes.* By Professor Willebrand.

(*Graefe's Archiv. für Ophthalm.*, B. 4, 1859; and *Med.-Chir. Rev.*, July, 1859.)

When local hyperæmia is dependent upon a laxity of the walls of the blood-vessels, advantage attends, Professor Willebrand, of Helsingfors, states, the employment of secale cornutum. He was induced to use it in these cases by the expectation that a means which acts so specifically upon the unstriped uterine muscular fibre must excite some power over the analogous structure of the arteries, and which its hæmostatic action proves, in fact, that it does. During his investigations he soon became struck with the fact that the heart of persons employing it soon underwent contraction in all its dimensions, and that even within the first twenty-four hours—a circumstance which he has frequently verified since. The first case that came under his care was an example of exophthalmos, accompanied with enlargement of the thyroid gland and hypertrophy of the heart. After a few weeks' use of the secale the hypertrophy of the heart and thyroid, as well as the projection of the eye, much diminished. The patient, however, left off the medicine, and the exophthalmos returned worse than ever. Since that period he has employed the secale in various cases in which increasing the contractility of the muscles of the blood-vessels or other tissues seemed to be indicated. It was found of especial advantage in a disturbed state of the accommodation-power of the eye, especially induced by over-taxing the organ on small objects with an insufficient amount of light. Children from some of the schools have furnished the author with many instances, and they have always been relieved by the secale. He relates a case in which impaired vision was always brought on by sewing or reading, and wherein the signs of some amount of chronic congestion were visible. Relief rapidly followed, and when the affection recurred some months after, it was as speedily relieved. He has also found the secale of great use in several cases of acute or chronic inflammation of the eye, and especially in blepharitis and the pustular conjunctivitis of children, the case proving much more rapid, and relapse being much less rare, than when local means alone are relied upon. No benefit has been derived from it in granular conjunctivitis and trachoma.

Proceeding upon the theory of its stimulant action upon the vaso-motoric nerves, the author has extended the employment of the secale to other local disturbances of the economy; and, as already observed,

he has had frequent occasions of observing its transitory influence in hypertrophy of the heart, without having any reason to believe that it is of any permanent utility in affections of this organ, the heart always returning to its former size soon after the use of the secale has ceased. In many cases of both chronic and acute hyperæmia it has proved of great service, and especially in cases of galactorrhea, and in indurations, tumefactions, and catarrhal affections of the uterus. Also, it has been very useful in enlarged spleen from intermittent fever, and when large doses of quinine have failed. It is especially indicated in the cases of relapsing intermittent depending upon enlarged spleen. In erysipelatous affections, it has often done good service applied externally as a cataplasm. The author formerly gave ten grains ter die, but now gives but five, combining it with magnesia, or, when chlorosis is present, with iron.

Art. 107.—*A new Ophthalmoscope.* By Dr. Graefe.

(*Medical Times and Gazette*, July 9, 1859.)

An ophthalmoscope fitted with adjusting tubes, rests for the patient's head, &c, by which the merest tyro may be enabled to see the deep structures of the eye, is now in use at the Royal London Ophthalmic Hospital. It is made by a Berlin optician, at the suggestion of M. Graefe and his assistant. Unlike the one hitherto in use, it is a large cumbrous affair, and requires to be fixed to the table or elsewhere before use. The patient's head being fixed against a rest, the telescope slides of the instrument are adjusted to a proper focus, and this once effected, a dozen observers in succession may look through the eyepiece, and all of them see exactly the same part of the retina without any trouble. It is, indeed, like looking through the tube of a microscope; the object never gets out of focus, and the proper adjustment having been effected by a skilled hand, any one can see the object. The common hand reflector and lens require a long training before they can be effectually used. For purposes of demonstration to a class the new instrument will doubtless soon throw the other out of use, since it prevents the loss of time and risk of annoying the patient's eyes, which a succession of inspections involves. To one well trained, however, so that he can find the optic entrance, yellow spots, &c., with perfect ease, we doubt whether the new instrument will add much. Its cumbrous size will confine it to the consulting-room or public institution, but at the latter for class purposes it promises to be invaluable. To the artist also it is a great relief, since it leaves the hands at liberty; and to draw from the ophthalmoscope is, with its aid, just as easy as to draw from the microscope. Its cost as at present made is, we believe, about five guineas. No doubt it will soon be to be had in the London shops.

Art. 108.—*An Ophthalmoscope fixed upon the Patient.* By Mr. Gillette de Grandmont.

(*Lancet*, June 23, 1859.)

M. Gillette de Grandmont, a medical student, has just brought before the Academy of Medicine of Paris an apparatus, which fixes upon the patient's face the lens used for examining the eye. The apparatus is composed of a concave plate, which fits the bridge of the nose; to this plate are added ordinary spectacle frames, which, by lying on the circumference of the orbits, give the instrument much steadiness, favoured by an elastic band running round the head. To the same plate is fixed, at right angles with the face, a short socket, in the interior of which is a box which carries a lens, movable in every direction. A screw, which moves the box, allows the observer to change the focal distance of the lens. When the apparatus is placed upon the patient, and the lens is brought into the axis of the pupil, the surgeon, taking with his right hand the reflecting mirror, illumines the interior of the eye. This manipulation will be greatly facilitated by the patient's head being directed with the observer's left hand, which remains free.

M. Gillette conceives that this apparatus affords the following advantages:

1. It prevents the blinking, which is inevitable with other instruments.
2. It fatigues patients less than other ophthalmoscopes.
3. It allows the most inexperienced observer to examine the interior of the eye.
4. It gives facilities for several persons to examine the same patient in succession, without the necessity of moving the instrument.
5. The observer has one hand free, which, being applied to the vertex of the patient, may direct the head to the most favorable position.
6. It is simpler and more readily adjusted than the mounted ophthalmoscope; and does not require, like the instrument held by the hand, a dexterity which is only the result of several months' practice.

Art. 109.—*On a new mode of removing Naso-Pharyngeal Polypi.* By M. Maisonneuve.

(*Comptes Rendus*, Aug. 22, 1859.)

The name given to this operation by M. Maisonneuve is "*boutonnière palatine.*" It consists in making a button-hole-like incision in the soft palate, and in drawing the polypus through this opening into the mouth, where it is an easy matter to apply a ligature or to use the knife. The great elasticity of the parts composing the soft palate allows the polypus to be drawn through a comparatively small opening, and after the operation is completed, the same elasticity will generally serve to close the opening without the help of sutures. The direction of the button-hole is from before backwards. M. Maisonneuve has

already performed the operation, and with the most satisfactory results.

Art. 110.—*On Colouring of the Lips by Tattooing after Cheiloplasty.* By Dr. Schuh.

(*Wien Med. Wochensch.*, xlvii, 1858; and *Med.-Chir. Rev.*, July, 1859.)

Two years since Professor Schuh performed cheiloplasty in the Vienna Clinik, upon a girl in whom one-half of the nose, together with the vomer and the whole of both lips, were wanting. The flaps for the lower lip were supplied from the region of the lower jaw and the neck, and that for the nose from the forehead, while the skin of the arm was employed for the upper lip. The connexion of the flap with the arm was divided on the tenth day, and all went on well, excepting that the new upper lip, at its lower edge, owing to the cicatricial process, was covered with corion. The red lip-colour was wanting to give the mouth an agreeable appearance; and Professor Schuh determined to endeavour to imitate this by tattooing. He first of all tried cochineal as a colouring material, but this produced a too pale red, and he then had recourse to cinnabar, which gave rise to a surprisingly natural colour.

The following is the procedure: the cinnabar is made into a thin paste with water, and the limits within which the pigment is to be applied are traced with a pen and ink, in imitation of the direction of the natural redness of the lips. For forcing the pigment into the organic substance, a bundle of sharp-pointed pins is employed, each pin being wound round with waxed silk from its head to within four lines of its point. Ten or twenty such pins are tied into a bundle with thread, dipped into the colouring substance, and repeatedly forced two or three lines deep into the lip. The margin marked by the ink is first to be coloured, and then the other portion, dipping the points into the pigment again as this is wiped off. Only a slight bleeding ensues, and the pain is very little, in consequence of the diminished sensibility of transplanted parts. Any of the pigment remaining on the surface should be left there until next day, and if any part is found to be less red than the others this can be easily remedied.

How long this redness will remain unchanged must be determined by further experience. In Professor Schuh's case it had become nowise paler at the end of a year and a half; and he believes that the introduction of the process of tattooing into the field of plastic surgery is not to be despised.

Art. 111.—*On the "Elliptical Artificial Tympanum."* By Dr. J. H. Clark.

(*Amer. Med. Monthly*, April, 1859.)

The material of this instrument is the same as that employed in the manufacture of some which are found in the shops of Toynbee's pat-

tern, but the form is wholly different. The form of Toynbee's drum is round, with a staff straight, or slightly inclined from the perpendicular, while the one here described is egg-shaped or elliptical, with a staff nearly circular. The point of suspension is not, like that of Toynbee's drum, in the centre, but in one end, which causes it to assume the desired concavity of an ellipse. After being worn a short time, it permanently assumes a concavo-convex form, the concavity looking inward, which greatly increases its effectiveness, and in shape it seems as far as possible to supply the loss of the natural tympanum. The form and direction of the staff on which the drum is suspended is curved downward, adapting itself to the shape and form of the canal in such manner as to be insulated, and in no case to touch the sides of the canal.

The drum is elliptical in shape, about a half inch in length, and three eighths of an inch in breadth. It generally requires reduction. It may be cut to any size.

The staff is about seven eighths of an inch in length, and is bent to the form before mentioned. It terminates without a ring, the end of the staff being cut off. If a ring is made to facilitate its removal, it will come in contact with the lower and outer edge of the meatus auditorius externus, producing unpleasant vibrations whenever the head is suddenly moved, and confusing the patient. The drum should be so introduced that the wire curves downward. The directions for its introduction are, in the words of a patient who had used the instrument with advantage: "I moisten not only the drum, but the ear, with a pencil dipped in water or glycerine. If the canal be dry, I find it of great service to apply the wet brush to a cake of fine soap, and thus applying to the ear weak soap-suds. This seems to make the drum adhesive, and it retains better its position. My ear is so dry that merely wetting the drum will not answer. If any do not find benefit from the artificial tympanum, I believe it is often for the want of judgment with regard to their introduction into the ear. I find that great care is needed with regard to holding the wire. I find that the proper direction to be given the staff is to incline it *downward* and *inward*, holding it tightly between the thumb and forefinger. I pass it down till I feel a gentle roar; I then press on gently with the forefinger only till I hear sound break distinctly. I find it very important not to push the drum in *too far;* I find if I do this that I do not hear so well as when the drum is out; I find that repeated attempts are frequently necessary to withdraw the drum entirely and take a fresh start, for I find it important to give it the proper direction on its first introduction."

Art. 112.—*Suggestions of improvement in Tracheotomy.* By Dr. D. Brainard.

(*Amer. Journ. Med. Sciences*, July, 1859.)

In order to prevent *hæmorrhage*, Dr. Brainard proceeds thus:

"Having incised the skin and facia by successive and careful incisions, I press the sterno-hyoid and sterno-thyroid muscles to each

side with the fingers, and thus expose the thyroid body. This effected, I passed under the isthmus a director curved, or an aneurismal needle. This was followed by a common suture needle, which may be passed with the blunt end foremost, armed with two very strong ligatures. A ligature is then tied very firmly on each side, and the isthmus of the thyroid body divided between them. A little dissection with a blunt instrument denudes the trachea to the required extent, and an opening can be made without danger of a drop of blood being drawn into it.

"The ligatures which have been thus secured, serve the purpose of fixing the trachea, if desirable, and they may be tied behind the neck so as to raise it forward, and keep the wound open. I never open the trachea until the hæmorrhage is stopped, and a large surface of it has been quite denuded.

Dr. Brainard's next object is *to keep the opening in the trachea pervious without resorting to a tube.* "The objections to a tube are twofold: 1st. When the operation is performed for the extraction of a foreign body, it prevents its exit; and it is desirable to leave this opening in such a state that the foreign substance may escape whenever it becomes loosened from its situation in the bronchia. 2d. In tracheotomy for croup, the prolonged sojourn of the tube has been considered by the most eminent surgeons, as a cause of the pneumonias which are so frequently the cause of death.

"The necessity for using the tube I avoid by the following means: Having denuded the trachea, insert a small suture needle, armed with a ligature, beneath two of its rings. Withdraw the needle, and, drawing gently upon the thread, make a semi-circular incision on one side, so as to form a valve, readily opened by drawing upon the thread. The opening thus formed can be kept patent or be allowed to close at will.

"This is a matter, perhaps, of much greater consequence than might be supposed without reflection. Most surgeons have found their operations for tracheotomy less successful than they had reason *à priori* to expect, and this has been attributed to the direct entrance of cold air into the lungs. Trousseau and Guersent have both advised that the air inhaled at that time should be quite warm without being too hot."

(B) CONCERNING THE CHEST, ABDOMEN, AND PELVIS.

ART. 113.—*Two cases of recovery after Gun-shot wound through the Liver.* By (1) Mr. PARTRIDGE, Assistant-Surgeon, Lucknow Field Force; and (2) Mr. HARE, Surgeon, 2d Europeans.

(*Indian Annals of Med. Science*, Jan., 1859.)

1. *Mr. Partridge's Case.*—Captain ——, æt. 31, has been thirteen years resident in India; temperament bilious; habits temperate.

He was dangerously wounded by a musket-shot on the 9th March, 1858; the ball entered the body in the medial line, immediately below the ensiform

cartilage, and passing backwards, was excised about five inches from the spine, on a level with the margin of tenth rib; at first, Captain —— suffered very severely from irritability of the stomach, which however yielded after a short time to the influence of sedatives and salines, and had entirely disappeared previous to his admission into the field hospital, on the 22d March.

There has been a very copious discharge of bile from both wounds, proving the liver to have been injured by the ball in transitu, and a small portion of the margin of the rib came away one day with the dressings, but in spite of these indications of the severity of the lesion, he has progressed most favorably from the commencement; the wounds are now nearly healed, and he is perfectly fit to travel.

The following further information relative to this very interesting case has been communicated by Mr. Partridge at the request of the Editors.

"Captain ——, from the first, progressed satisfactorily; he had no bad symptoms during the whole time he was under my charge in the field hospital, bile was discharged from both openings, and there was slight exfoliation of the tenth rib by the posterior wound.

"He went home to England in the same steamer that I did, and from the fatigue of the voyage suffered slightly from pain in the hypochondriac region; after spending some time in the Channel Islands, however, and enjoying thorough rest, his wounds closed over, and when I saw him last, on the 2d December, he was in as perfect a state of health as he had ever enjoyed—complained of no pain, and was able to take exercise in every way as freely as ever.

"I really do not think there are any particulars to be added to the statement of his case, his progress towards recovery was so uniform throughout; except, perhaps, that the matter vomited in the stage of irritability of the stomach, which supervened on the receipt of the wound, was slightly sanguineous in character, owing, probably, to sympathetic congestion of the gastric mucous membrane.

"The main points of the case appear to me to be, the undoubted evidence of the severity of the original lesion, and the *perfect* recovery under the combined influences of a good constitution, perfect rest, and an antiphlogistic regimen."

2. *Mr. Hare's Case.*—Lieutenant —— was sent to hospital in a dooley from one of our distant picquets during the siege of Delhi. On his arrival, he said himself that he felt he was mortally wounded and was very faint. On examining the wound, the ball was found to have entered the liver and passed through it. The ball was found on the opposite side, and near to the spine, where I extracted it. I gave him a full opiate and placed him in bed.

The next morning he seemed to have recovered a little from the shock, but his pulse was still weak and thready, and his countenance anxious: towards the evening, he complained of constant short cough, as if the diaphragm had been touched by the ball in its course, which, from its direction, was very probable. The treatment ordered was repeated small doses of morphiæ mur. $\frac{1}{4}$ gr. dissolved in dilute murat. acid every four hours, and occasionally when the symptoms were more urgent, solid opium every four hours, with water dressing to the wound.

On the evening of this day, Lieutenant —— was in a state of prostration, and it was not supposed possible that he could live through the night; towards morning his lower extremities became quite cold, and his pulse thready. Stimulants, brandy, and wine, with arrow-root, were administered freely, and he rallied again as the day broke.

From this time he improved considerably; soup and arrow-root, wine and brandy, were given frequently. His bowels had not been moved, but purgatives were carefully avoided.

The principal symptom he now suffered from was a short spasmodic cough from irritation of the diaphragm. The wound was now dressed, and healthy pus escaped. The wound could be seen and traced into the substance of the liver. The same treatment was continued, of opiates at night, and free support and nourishment during the day, with a liberal allowance of brandy.

July 3d, 1857.—The bowels up to this date had not been open, and he complained of uncomfortable feelings in the abdomen, which seemed to arise from constipation. Ol. ricini 3vj. was therefore prescribed. This opened his bowels with temporary distress, but in the evening, when he recovered from this, he felt comfortable and better.

Lieutenant —— now recovered rapidly, and with the exception of a short and frequent diaphragmatic cough, suffering little pain or inconvenience till September 6th, when he had symptoms of intermittent fever and diarrhœa: for this, I prescribed pil. hydrarg. grs. ij., quinæ disulph. grs. iv., opii gr. $\frac{3}{4}$, every third hour, and it was continued through the next day.

From this time all medical treatment ceased, beyond regulating his diet, which, however, was always liberal and nutritious. He was able to move about towards the middle of September, and on October 3d, went on sick leave to the Hills, where he has continued in good health.

March 2d.—Lieutenant —— sends me the following report of his health, from Dr. Nisbett, at Simla, since his residence there.

Lieutenant —— came under my care on his arrival at Simla, in the beginning of October; he was suffering from fever, probably in consequence of the fatigue of the journey, and was weak and had no appetite; he has since then frequently had attacks of fever, and occasionally pain in the liver if he attempts to ride or take strong exercise. The treatment has been chiefly the use of quinine with other tonics.

Art. 114.—*On "Réduction en bloc ou en masse."*

By Mr. Birkett, Surgeon to Guy's Hospital, &c.

(*Proceedings of the Royal Med. and Chir. Society*, June 14, 1859.)

The term "réduction en bloc ou en masse," has been given by writers on hernia to those cases in which the hernial protrusion, together with its investing sac, has been pushed into the abdomen by the efforts made to reduce it. The principle was first enunciated by Le Dran, and since then it has been generally accepted as occasionally occurring in all forms of hernia. The object of this inquiry is to ascertain—

1st. The applicability of the term to inguino-scrotal hernia exclusively.

2d. The actual nature of the lesion.

3d. The herniæ in which it most commonly occurs; and

4th. The practical influences deducible from the cases on record.

The cases published by various surgeons are divisible into two classes:

1. Those in which the patient died without the strangulated bowel being relieved.

2. Those in which the constriction around the bowel was removed.

A brief history of some of the cases is given to show the advance made in the science of the anatomy of the hernial sac, the causes of the impediment to the reduction of the hernia, and the way in which this accident was discovered. The lesion described in these cases is of three kinds: 1st, when the hernia is pushed out of sight, and is found after death between the peritoneum and the abdominal walls; 2d, when the hernia is found after death in a pouch within the abdominal walls; 3d, when the orifice of the hernial sac has been torn off.

From the facts recorded by the several writers the following conclusions are deduced:

1. That although the hernial sac is *displaced*, it is not detached from its scrotal envelopes.

2. That the practicability of opening the hernial sac in the inguinal canal is good evidence that it was not pushed into the abdomen.

3. That the difficulty in bringing out the sac containing the hernia from the abdomen, when it is said to be therein, is evidence that its connexions must be more firm in that region than would result from the mere pushing there.

4. That the situation of the hernia has been pointed out in some cases, although the exact nature of the lesion has not been fully described.

5. That the details of the cases are not in accordance with the presumed, or accepted, conditions of the accident.

6. That the evidence of the practicability of the patient, or a surgeon, reducing into the abdomen a *scrotal hernia*, together *with the sac* still strangulating its contents, is, at the present moment, equivocal.

7. And, therefore, that the term "réduction en bloc ou en masse" is not so applicable to these cases of oblique inguino-scrotal hernia as to other species.

The author's explanation of the mechanism of the injury is next detailed, with the assistance of diagrams, and in order to prevent any perplexity arising from the use of anatomical terms, a few definitions of the parts immediately concerned are given. The mechanism of the lesion seems to consist of, first, a dilatation of the neck of the hernial sac by the force employed to reduce the hernia, which is prevented passing into the peritoneal cavity by the contracted orifice of the sac: secondly, the laceration of the dilated neck of the sac, which permits the escape of its contents into the loose connective tissue between the peritoneum and internal abdominal fascia. Explanations are next offered of the manner in which the intra-abdominal pouch may sometimes be formed, although from the extreme rareness of the occurrence, the fact of this slow development is very questionable.

Part III is devoted to an analysis of the cases recorded by numerous writers, and which the author reduced to the form of tables. These tables accompany the paper. The following facts are especially considered:

1. The age of the patient when the accident happened.—It may

occur at any age between ten and thirty; but it has been most frequent between thirty and forty years of age.

2. The age of the patient at the time the hernia was developed.—In a large proportion the hernia was developed before thirty years of age.

3. The variety of inguinal hernia.—All were *oblique* inguinal, a very large majority being in the scrotum. Those cases of hernia in which the protrusion passed into the vaginal process of the peritoneum constituted a majority. The importance of the circumstance is demonstrated, and an anatomical comparison is instituted between these cases and those inguinal herniæ of slow and gradual formation.

4. The site of the testis has varied in several cases, and it is an important fact to remember.

5. The protruded viscus has been either reducible intestine only, or intestine with irreducible omentum; but, in the majority of the cases, reducible intestine; and generally, ileum formed the hernia.

6. It appears that this complication has occurred in cases of quite recent hernia, as well as in those of long standing.

7. The local means by which the hernia was pushed from the scrotum were employed in some cases by the sufferer; in others by the surgeon: and in some whilst the patient was under those influences which are employed to diminish muscular tonicity, especially chloroform.

8. In the majority of the cases there has been a local indication that the hernia was not returned into the peritoneal cavity. In all, constitutional symptoms have clearly demonstrated the fact.

In the fourth part, the practical deductions from the foregoing facts and observations are stated. They refer, first, to the diagnosis of the case; and, secondly, to its treatment. The diagnostication may be formed from the age of the patient; the age at which the hernia was developed; the variety of the hernia; its descent into the vaginal process of the peritoneum; the site of the testis; the viscera constituting the hernia; a disposition to the recurrence of the hernia after it is supposed to be reduced; the disappearance of the hernia after the application of the taxis, assisted by persistent constitutional indications of strangulated intestine; and local indications more or less distinctly marked. The treatment consists in immediately exploring the inguinal canal in every case in which the slightest suspicion of this accident exists; in freely exposing the internal abdominal ring; and, whilst returning the protrusion into the peritoneal cavity, in taking great care that a part of it does not glide through the laceration in the sac outside the peritoneum. Preparations and drawings were exhibited.

ART. 115.—*On the radical cure of Hernia: with an account of an improved instrument, and notes of forty cases.* By REDFERN DAVIES, Esq., Surgeon to the Birmingham Workhouse Infirmary.

(*Medical Times and Gazette*, Aug. 3, 1859.)

In cases of scrotal and femoral hernia where the tissues are relaxed and the rings of large size—say, capable of admitting easily two, three, or even more fingers—considerable difficulty and disappointment is experienced in endeavouring to effect a cure by the first operation; and it has occasionally happened to others, and to the author, to be obliged to repeat the process.

From a practical acquaintance with the subject on the living, and repeated trials and experiments upon the bodies of the dead who have been affected with hernia, Mr. Redfern has been led to believe that the cause of such failures is not attributable to any fault in the theory of Wütz er's method, but to a defect in his instrument, and upon the following grounds he believes that these failures will be obviated by the adoption of the accompanying mechanical improvements in the instrument.

Upon examining a case of scrotal rupture in which the operation for the radical cure has failed (supposing, of course, that it has been properly managed, together with the proper after treatment), the rings and canal will be found to be obliterated probably for some three fourths of its extent, or there may only remain an aperture which will with difficulty admit a crowquill; and thus, though the patient may be greatly benefited, and with the aid of a truss resume his duties, a radical cure has not been effected.

That portion of the canal and rings which have been blocked up is invariably that which is nearest the abdominal walls. "The gut slips down behind the plug" are the terms in which both surgeons and patients express the mishap which has occurred, and the reasons for this, Mr. Redfern Davies believes, are as follows:

The anterior or superior layer of the invaginated integument is subjected to not only the pressure of the wooden plug to keep it in apposition with the opposed surface of the rings and canal, but also to the direct pressure of the compressor. The compressor exerts its influence exclusively upon the parts included between it and the upper surface of the said wooden peg, and in no wise affects the posterior parts, viz., the posterior layer of invaginated integument and posterior surface of canal and ring, whose only chance of being kept in apposition depends upon the accuracy with which the plug fits the canal, etc., as a whole.

The floor of the canal, etc., especially where the tissues are lax, as generally occurs in cases of old and large ruptures, does not present in the same manner an opposing resistance to the wooden plug as does the compressor, and thus should the two former be not very accurately adapted the one to the other, adhesion cannot even be expected to occur.

The mouth, or internal opening of the canal, is funnel-shaped, with

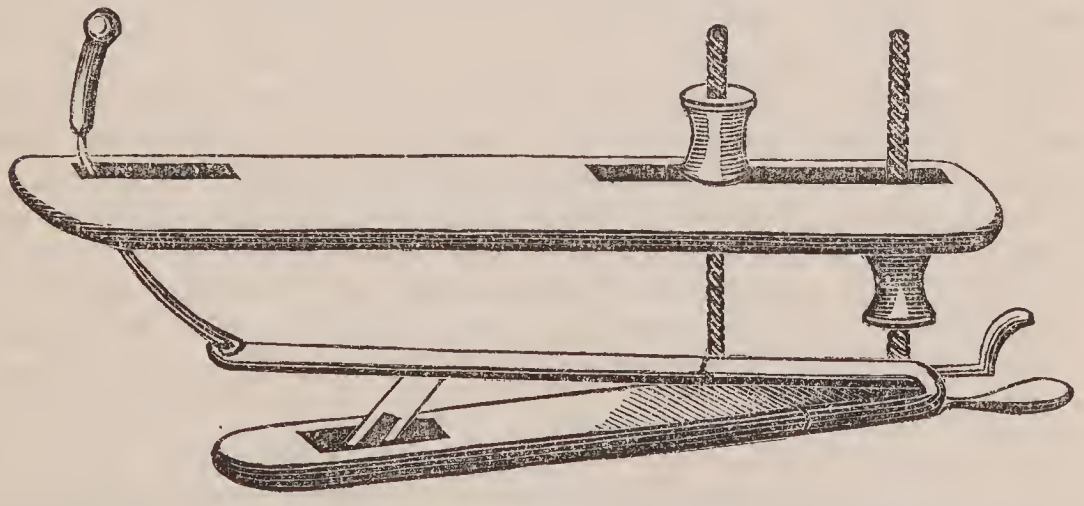
the posterior surface the more sloped. Consequently, if there be any weak point, it will be there, and it is sure to receive all the shocks of the gut during the process of cure.

Besides it is evident that a cylinder, even closely applied to the rest of the extent of the canal, cannot fill up its funnel-shaped mouth, but must leave an interspace, which will be on the posterior surface.

And, again, it is not always practicable to introduce to a sufficient extent a solid plug, which would best fit the internal ring, by reason of the resistance of the other structures to its passage, besides entailing an endless variety of such plugs.

By the adoption, however, of the principle now proposed, viz., a plug, whose lower half is capable of expanding, these difficulties are severally overcome.

A glance at the diagram will render its application at once evident: it will be seen that by turning the handle and thus causing the lower half of the plug to expand, that the pressure upon the parts included between the upper portion of the plug and the compressor, is left in exactly the same condition and relations as in the usual instrument, but that a force is exerted upon the posterior portions of the invaginated integument, canal and rings, which it gently, but firmly, retains in complete apposition one with the other.



By reason of the greatest point in its expansion being at the extremity of the instrument, and gradually tapering, two objects are accomplished; first, the funnel-shaped mouth, and the internal opening, is filled with a plug, whose sides are inclined towards its own—the invaginated integument being, as it were, modelled upon it; and, secondly, the rest of the canal is at the same time subjected to no undue pressure.

The principle adopted by Mr. Spencer Wells is likewise made available, viz., having the transverse diameter of the instrument very much greater than the antero-posterior, whereby the shape of the ring is altered, it being converted into a mere chink, and thus affording an additional security against descent of the gut; and so leaving as small as possible an amount of space between the opposed surfaces of the *doigt de gant* to fill up when the instrument is removed. A thin india-rubber finger-stall caps the end of the instrument, preventing any soft parts getting between the blades.

Mr. Redfern Davies adds a table of cases, forty in number, which embraces the three varieties of oblique, ventral, and femoral hernia, occurring in ages varying from one year to sixty-five, and in both sexes. From this table it will be seen that thirty-seven were cured, five requiring the operation to be repeated, and that two failed (in one of which smallpox appeared on the day after removal of the instrument). In this list Mr. Davies does not include the more recent cases upon which he has operated.

ART. 116.—*Recovery under very unfavorable circumstances after Herniotomy.* By Mr. HILLMAN, Assistant-Surgeon to the Westminster Hospital.

(*British Med. Jour.*, Oct. 1, 1859.)

The chief features of interest in this case are—

1. The total absence of any evacuations *per anum* until the tenth day after the operation.

2. The persistence of the vomiting for fifteen days after the operation; the vomited matters being distinctly fæcal during a portion of the time.

3. The occurrence of pyæmic symptoms with deposits of pus, in patches of various sizes, under the cuticle, over a great portion of the body, and the symmetrical crippling of the little fingers of both hands from purulent inflammation.

CASE.—S. H—, æt. 31, an omnibus-conductor, admitted August 22d, 1859, states that he had a hernial protrusion in the left groin eight or nine months ago, for which he came into hospital and had the protrusion returned. He has not worn a truss since this occurrence, and there has usually been a fulness of the inguinal canal of that side. On August 21st, whilst carrying his child, after long walking, the swelling became suddenly much larger, and extended downwards into the scrotum, giving rise to considerable pain and vomiting.

On admission, there was a large oblique inguinal hernia on the left side, distending the scrotum and the inguinal canal. The taxis was employed by the house-surgeon whilst the patient was in a hot bath, but without effecting any diminution in the swelling. Mr. Hillman, on being sent for, finding the tumour excessively tense and painful, the abdomen tender on pressure, and the patient in great suffering, with a cold, clammy skin and a slow and feeble pulse, determined to operate immediately, without any further preliminary treatment.

Chloroform having been administered, an incision, three inches in length, was made over the upper portion of the swelling, extending about equally above and below the internal abdominal ring. An attempt was made, by successive division of the coverings, to return the contents without opening the hernial sac; but as this was found impracticable, the sac was opened, and the stricture (situated in the neck of the sac itself) having been divided, the hernial contents (which consisted of a very large quantity of omentum and a long loop of small intestine, with scarcely any serous liquid) were returned into the abdominal cavity.

The intestine and omentum were both much congested, but did not present any gangrenous appearance or odour. The inguinal canal was ascertained to be perfectly clear, and the wound was brought together by stitches, compress, and bandage. The patient expressed himself as much relieved by the operation.

No action of the bowels occurred until the tenth day after the operation; the vomiting meanwhile continuing unchecked by the remedies employed (effervescing draughts, hydrocyanic acid, chloric ether with sulphuric acid, ice, turpentine, and mustard fomentations), attended with considerable distension of the abdomen, a weak and rapid pulse, a dry and brown tongue, with considerable prostration, the patient being apparently kept alive only by the free administration of brandy, of which as much as twenty ounces were frequently given during the twenty-four hours.

On the tenth day after the operation the bowels were slightly relieved, and on the eleventh there were several copious dark-coloured evacuations, containing abundance of bile. The vomiting now became much lessened.

During the next three days there was considerable diarrhœa, and numerous pustules and blebs of various sizes made their appearance over the body, especially over the lower part of the back, and the little fingers of both hands presented much the appearance of severe whitlows.

The purulent matter was allowed to escape by incisions made into the larger pustules and into the fingers.

He is now (September 23d) slowly recovering from a state of great prostration, under the use of nutritious diet and quinine.

Art. 117.—*On the treatment of Fissure of the Anus by injections of Rhatany.* By Dr. Trousseau.

(*Med. Times and Gazette*, Feb. 5, 1859.)

"We have seen recently," writes the foreign correspondent of the journal from which this quotation is made, "a somewhat deep and painful fissure of the anus successfully treated by M. Trousseau, by means of injections of ratania administered several times in the twenty-four hours, together with the use of mild laxatives. It resulted from painful defecation, the bowels having been constipated for some days previously. The sufferings of the patient were intense, and lasted for fourteen hours consecutively. In reference to anal fissure, Trousseau denies the old theory, that it is produced by spasmodic action of the sphincter; on the contrary, he believes that it is most generally the result of irritation caused by the acrid discharges of the vagina finding their way to the anal mucous membrane, and completed during a state of constipation. Although spasm of the sphincter is almost an invariable accompaniment of this painful complaint, it can only, according to Trousseau, be regarded as an effect; in other words, the spasmodic action is entirely voluntary, and kept up by the patient in order to save herself the pain to which the irritable fissure gives rise, as is the case with a child who, when labouring under a chopped lip, purses up its mouth when it eats or laughs. M. Jobert adopts the same view as Trousseau; both condemn Boyer's method, which consists in the division of the fibres of the sphincter muscle, as altogether unnecessary."

Art. 118.—*On Fistula in Ano.*

By Mr. J. R. Lane, Surgeon to St. Mark's Hospital for Fistula.

(*Lancet*, April 23, 1859.)

After describing his views respecting the situation and mode of formation of the different kinds of abscesses which are followed by fistula, Mr.

Lane says it is erroneous to suppose that abscesses in the neighbourhood of the anus are all but certain to give rise to this complaint. That the great majority do so is undoubtedly the case; but the author thinks that if early and free incisions were more generally practised, permanent closure of the cavity, especially in cases of acute abscess, would frequently take place. He has met with cases repeatedly in which he thought a fistula was inevitable, but in which the incision had, nevertheless, healed soundly and rapidly. Of the three varieties of fistula, the complete was the most common; the blind external was next in order of frequency, and the blind internal the most rare. Of 68 cases upon which the author has operated in St. Mark's Hospital during the last eight months, 46 were complete, 20 were blind external, and 2 were blind internal. Sir B. Brodie had maintained that an internal aperture was always to be met with if sought for in the proper situation, and would not therefore admit the existence of an external blind fistula at all. In the twenty cases alluded to, however, no internal communication could be found after the most careful search, not only with the probe, but also by injecting fluid with a small syringe into the sinus, which method would frequently, by the passage of the fluid into the bowel, demonstrate the existence of a communication, even when it could not be discovered with the probe. In operating on these cases an artificial communication had been established either with the bistoury or the director in the usual way, and all had healed soundly and well—a result which would scarcely have taken place had an internal aperture existed, and had he failed to include it in the incision. The position of the internal aperture of a complete fistula was, as now generally understood, almost invariably placed just above the sphincter muscle, although the sinus itself might often extend some distance higher up. The author has only met with three exceptions to this rule, and in these he has found it placed two inches or more within the anal aperture. In the cases in which the internal aperture was in the usual situation, but the sinus extending higher up, he has always found it sufficient to lay open the lower part of the sinus through the internal communication into the rectum, without meddling with the upper part. He thinks it advisable, however, in such a case always to have a free incision through the sphincter muscle, in order that there might be a ready outlet for any matter that continued to be secreted. In the exceptional cases, where the communication was placed higher up, it was, of course, essential to include it in the incision.

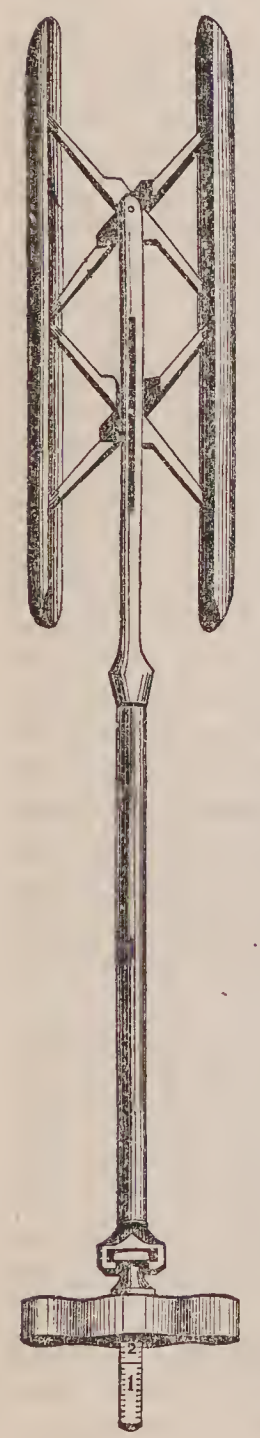
After some further remarks on the operation for fistula and its after treatment, Mr. Lane referrs to the association of fistula with phthisis pulmonalis, which he believes has been over-estimated. M. Andral's statement, that he had examined 800 persons with phthisis, and only found one who had fistula, was well known, and the author believes that phthisis, by its debilitating influence, might conduce to abscess and fistula, and, on the other hand, that the drain from the latter might accelerate the development of tubercle in those predisposed to it. Whether an operation for fistula should be performed in phthisical persons, he decides in the affirmative; for in some half a dozen cases of this kind, not only did the wound heal favorably, but a decided im-

provement in the health of the patient resulted. It had been stated that an indurated condition of the internal aperture was a characteristic of fistula in phthisical persons. The author does not believe it to be a sign which could at all be relied on, having seen fistulæ with a perfectly smooth condition of both external and internal apertures in persons suffering from phthisis, and also a highly callous condition of those apertures in persons in whom there was no suspicion of pulmonary disease.

ART. 119.—*On Stricture of the Rectum.* By Mr. ARMSTRONG TODD, Surgeon to the St. Marylebone Infirmary.

(*Medical Times and Gazette*, Aug. 6, 1859.)

Mr. Todd objects to the common rectal bougie, on the ground that an instrument large enough to distend the rectum to its proper size cannot be borne by the anus without causing much annoyance and distress to the patient. He also describes an instrument which is free from this objection. This instrument is drawn in a partially extended position, so as to show its action more perfectly. It consists of two blades of finely-polished steel, forming, when closed, a small-sized oval bougie. These blades are about three inches and a-half long, rounded above and below, and made to separate from and approach each other in a parallel direction, by mechanism contained within. Beneath these is a round stem, a quarter of an inch in thickness, upon which the anus and sphincter are allowed to contract. The parallel movement of the blades is effected by four slight bars of steel, placed in pairs—one pair crossing each other above, the other below, united at their intersection by a pivot. The extremities of each pair at the centre of the the blades, are connected together and to the centre of the blades by means of hinges, their distal extremities being permitted to traverse a groove within the blades. The stem before spoken of is hollow, and is continued above, within the blades, into a fork, the extremity of which is attached to the pivot connecting the intersections of the superior crossbars. Through this hollow stem passes a rod, which also ends above in a fork, attached in a similar manner to the pivot through the intersection of the inferior crossbars. The other extremity of this rod is a screw, on which is a graduated scale; to this a thumb-nut is fitted, having a rim on its upper part, which revolves in a groove in the extremity of the outer or hollow stem.



The effect of this mechanism is, that when the nut is turned from right to left, the inner rod is pushed up, and the intersections of the crossbars are made to approximate, the horizontal diagonal of the central

quadrangle becomes, therefore, elongated, and thus the blades are separated. A contrary movement of the nut draws down the rod, and brings the blades together. The screw is made so fine, that dilatation can be effected by an exceedingly gradual movement.

Mr. Todd relates a case in which he used this instrument with success, and he suggests that it may be found useful in other cases where dilatation is required.

ART. 120.—*Unusually large vesical calculus, removed by Recto-vesical operation.*—By Mr. SOUTHAM, Surgeon to the Manchester Royal Infirmary.

(*Proceedings of Med. and Chir. Soc.*, June 28, 1859.)

CASE.—The patient, æt. 21 years, was admitted into the Manchester Royal Infirmary with symptoms of vesical calculus, from which he had been suffering about sixteen years. On sounding him the stone was found to be of large size. He was emaciated almost to the lowest point compatible with life, unable to leave his bed, and suffering from a constant desire to empty the bladder, with severe pains in the loins and the lower part of the abdomen. The urine was loaded with pus, which on standing formed a thick white viscid sediment. It was highly ammoniacal, and a very considerable quantity of albumen was precipitated by boiling and the addition of nitric acid. Operative procedures were deemed unadvisable, until the hectic fever and great debility under which he was labouring were relieved. He was therefore placed on nutritious diet, with eight ounces of wine daily, and the bicarbonate of potash with opium, and large dilution with water, were given to allay the irritation of the mucous coat of the bladder. Under this treatment the patient's strength so much improved, that in a month the question of operation had to be entertained. Judging from the long period of sixteen years, during which the stone had been growing, the grave effects it was producing on the health of the patient, and from the more certain evidence of examination by the sound and the finger introduced into the rectum, I was convinced that the concretion was of large dimensions. The bladder had become so contracted by long inflammation, that only a few ounces of fluid could be injected into it; the general health was still precarious, and to crown the embarrassment there was still a copious deposit of albumen in the urine. The question that suggested itself was the following: did this indicate degeneration of the kidneys? If so, any thought of operation must be renounced. To the solution of this difficulty the microscope now afforded valuable assistance, and by this instrument the urine was repeatedly examined to discover whether any fibrinous casts of the uriniferous tubes were present: none, however, were found, nor any reliable indications of renal epithelia. And on the more accurate comparison of the quantity of pus and blood in the urine, with the amount of albumen precipitated by nitric acid and heat, the conclusion was come to that the albumen came from no higher source than the bladder itself, and was simply deposited from the liquor puris, and small quantity of blood always present in the urine. As the kidneys were considered not to be implicated, an operation was determined upon, and on the 17th of December the calculus was removed by the recto-vesical section.

Chloroform having been administered, and about half a teacupful of warm water injected into the bladder, a scalpel guarded by the finger was introduced into the rectum, and the sphincter and lower part of the anus com-

pletely divided. The urethra was opened anteriorly to the prostatic portion, and the finger passed through the wound into the bladder. As was suspected, the calculus proved to be of large dimensions. Accordingly, the wound in the prostate was enlarged. By means of the finger, the rest of the prostate and neck of the bladder were sufficiently dilated to admit a pair of forceps. On the introduction of the forceps it was found to be impossible to grasp with them so large a stone, as the contracted and indurated state of the bladder prevented the divergence of the blades. A scoop was now used, but with no better success: the stone could not be disturbed from its original position. Finding it difficult to lay hold of the calculus in the usual way, I had the screw of a straight-bladed forceps removed, that the blades could be separately introduced, one over and the other below the stone. The handles having been brought together and the screw reinserted, the calculus was grasped and slowly extracted, the operation occupying from ten minutes to a quarter of an hour.

The calculus measured eight inches in circumference in one direction, and seven in the other. It consisted principally of triple and earthy phosphates, with a nucleus of lithic acid. It weighed 4 oz. 6 dr. and 25 grs.

The patient had an excellent recovery, no constitutional disturbance of any amount followed the operation.

The bowels were restrained in their action for a week by the administration of opium. Up to the 31st of December, all the urine passed by the rectum; it now commenced to come by the urethra. No inconvenience was at any time experienced from the passage of fæcal matter through the urethra. The pus and albumen gradually increased in quantity.

The fistula was not interfered with until the 18th of February, when, as some of the urine continued to pass through the rectum, it was examined. It appeared to be in the membranous portion of the urethra, and about a quarter of an inch long. It was touched once with nitrate of silver, and subsequently on two occasions the electric cautery was applied. He left the hospital on the 28th of April cured, having for the three weeks previously been free from all signs of the fistula, during which time he was engaged in assisting the nurses in the wards.

Mr. Southam, in his remarks, does not advocate this operation except in especial cases, considering that the lateral method is the safest in the majority of instances.

He was induced to resort to it in the above-mentioned patient, on account of the presumed large size of the stone, the indurated and contracted state of the bladder, and the unsatisfactory state of the general health.

After referring to the risks which attend the lateral method, where the calculus is of large dimensions, he alludes to the objections urged against the recto-vesical operation, the principal of which is its liability to the formation of a permanent fistula.

This, he believes, might to a great extent be avoided, if the incision into the urethra were limited to only a part of the prostatic portion.

He considers it would be seldom necessary to extend the excision through the neck of the bladder, experience having convinced him that the obstacle to the extraction of large calculi by the lateral method exists more in the surrounding structures than in the prostate, which readily yields to steady and cautious dilatation. In the case now related, there was abundant proof of this; indeed, a calculus of much larger dimensions than the one described could have been extracted without difficulty by the same incision. He proposes to call the operation the recto-urethral.

Art. 121.—*On the treatment of Phymosis without the knife.* By Mr. Darby, of Bray.

(*Dublin Medical Press*, May 18, 1859.)

Mr. Darby relates two cases, from a series of eight, in which he adopted a plan which may in some instances supersede the necessity of any more serious operation.

Case 1.—On the 3d of May, 1857, a lad, æt. 12, came under my care; he had phymosis; his prepuce was very much inflamed and thickened; a glairy muco-purulent discharge issued in considerable quantity through the orifice, which was excoriated, causing severe pain on micturition. I was reluctant to use the knife, but felt it necessary immediately to adopt some means to relieve his sufferings. It occurred to me that the introduction of a piece of lint between the prepuce and the glans might afford relief, and I forthwith inserted a narrow slip of lint dipped in black-wash, applied water-dressing externally, ordered him to take a saline aperient, and to go to bed. Next day I removed the lint and replaced it by a larger piece; on the following day I stuffed the prepuce as full as I could pack it, and on the 6th (the third day of treatment) we could without difficulty draw the prepuce backwards and forwards over the glans. The removal of the phymosis was complete.

Case 2.—In October, 1858, a man, æt. 23, consulted me for a gonorrhœa he had contracted about three months previously. On examination, I found phymosis, with a considerable amount of thickening and induration of the prepuce, with evidence of warts and ulcers within. I proceeded to introduce some lint wet with black-wash, but the attempt gave him so much pain that he refused to submit, and I was obliged to substitute oiled lint—a very slender strip of which he allowed me to introduce, water-dressing was applied, and purgatives and rest prescribed. On each of the two following days I introduced a strip of lint wet in black-wash increasing the size of the plug each day. On the fourth day, he (finding himself better, and being most anxious to escape an operation he had witnessed in one of his acquaintances) volunteered to introduce a plug himself; this he performed three or four times daily with such good effect, that on the seventh day he retracted the prepuce.

"Although the eight cases I have so treated have been satisfactory in their results, I am not so sanguine as to suppose *all* cases will yield to this simple mode of treatment; but I do confidently believe, if fairly tried, it will prove successful in the great majority of cases, and it may be assumed that where it does succeed the patient will have been saved from mutilation.

Art. 122.—*On the value of Internal Incision in obstinate Strictures of the Urethra.* By Mr. Henry Thompson, Assistant-Surgeon to University College Hospital, &c.

(*Medical Times and Gazette*, Oct. 29, 1859.)

There are two classes of cases to which the author conceives internal incisions to be applicable: 1. Those in which the stricture is so unyielding that no dilatation, simple or continuous, materially enlarges the passage or ameliorates the symptoms; such examples usually occurring in patients who have been subject to the complaint for twenty years or more, and who have undergone repeated and long-

continued courses of treatment. 2. There is a class of cases for some of which, severe and obstinate stricture having occurred in comparatively early life, internal division appeared to be the most appropriate treatment. For these, the object of the operation is not only to remedy present difficulties (as in the preceding class), but also to anticipate future ones, since it is almost absolutely certain that serious, if not fatal injury, will result long before the term of life is past, where during the early part of it a severe stricture is established, and merely palliative treatment is applied. He believes it to be a question which we are bound seriously to consider, whether it may not be more desirable to cure the patient, if possible, before extensive urethral disease has been set up, or organic complaints in the bladder or kidneys have been established, than to postpone the attempt until such changes either threaten or have taken place, and the effect of palliative measures has been well-nigh exhausted. This is a view of the subject which, in the author's opinion, has not been sufficiently considered. The manner of performing internal division of the stricture was next described. During the last few years Mr. Thompson has studied the modes generally adopted both at home and abroad, especially the latter, and had made it his business personally to examine and estimate them; the consequence of which was that he had employed the method about to be considered, and with a success which gave him a high opinion of its utility. For the successful practice of the operation, the three following conditions must be complied with:—1. The cutting instrument must be passed through the stricture, and the incision be made from behind forwards, that is, towards the orifice of the urethra, not from before backwards. 2. The limits of the stricture being first accurately defined, the whole of the contracted part should be divided. 3. The borders of the incision should be maintained apart by catheterism subsequently performed, and healing of the incision by first intention be thus prevented. After dwelling on each of these points at some little length, Mr. Thompson invites particular attention to an important point in connexion with the kind of stricture to which incisions are applicable. He is anxious to combat a very generally received opinion, that the narrowness of a stricture is the measure of its severity, an opinion which is wholly erroneous, and productive of grave error in practice. The truth is that a very narrow stricture, for example, one admitting only an instrument of the size of No. 1, sometimes produces comparatively slight symptoms, and is easily amenable to dilatation, while there are exceptional cases in which a stricture is by no means narrow, admitting say No. 4 or 5, but which is quite non-dilatable, and is accompanied by most severe symptoms. Narrowness, *per se*, is not therefore the guage of severity. The most important characters of organic stricture, whatever may be its calibre, are non-dilatability and contractility; the former denoting a condition in which the tissue constituting the stricture is so unyielding that dilatation, however carefully employed, does but slightly enlarge its calibre, or improve the symptoms; the latter denoting a quality, through the agency of which, whatever temporary effect may be produced by dilatation, the original degree of narrowing reappears almost immediately after ceasing to employ the instrument. The

erroneous belief referred to is exemplified in the remark so frequently met with, that if a No. 4 or 5 can be passed, any incision must be unnecessary. The fact, however, is that not merely the calibre, but many other conditions of the stricture, and also system at large, must be considered before it is possible to come to a conclusion respecting the kind of treatment which should be adopted. These points are discussed in detail by the author. There was one important fact in relation to non-dilatability, viz., that this particular quality of the stricture appears generally to be developed in proportion to its proximity to the external meatus; so that those cases for which incision is most indicated, are precisely those in which the incision is rarely accompanied by any risk whatever. The instrument which Mr. Thompson considers to supply the best method of fulfilling all the indications required in the majority of cases, is the urethrotome employed by Civiale for fifteen years past, and now slightly modified from the original pattern. The mode of employing it is minutely detailed, and the after treatment described. For cases in which the stricture is too narrow to be treated by this instrument, Mr. Thompson employs a simple urethrotome of his own design. The accidents which might happen after internal incisions were then discussed and considered from the facts presented in the careful observation of forty-two cases treated by the especial form of urethrotomy described. These accidents were proved to be slight, and in no single instance had led to a fatal, or even threatened a dangerous result. The important fact, says the author, is this, that in most cases it is in our power by internal urethrotomy to replace a confirmed non-dilatable stricture by a condition of the urethra, in which the occasional use of an instrument maintains the normal calibre. In this manner we may confer upon the patient a benefit of no ordinary value, not only in relation to the removal of present symptoms (which may be accomplished equally by other methods), but in the prevention of those more serious evils, which will certainly arise in the course of advancing age. It is this which has long been an important desideratum in practice; unhappily it has been the custom to regard too much the present results, and too little the future difficulties in our treatment. Most triumphant is dilatation in regard to the present in the great majority of cases, but in a certain proportion of them it does but postpone the evil day. He claims for internal urethrotomy, when properly applied to appropriate cases, the position of an admirable adjunct or supplement to dilatation. It is on no account to be regarded as a treatment antagonistic to or competitive with dilatation, but as often rendering wholly amenable to that process a stricture which had been completely rebellious to it before. Finally, Mr. Thompson presents the details of eight cases, which he had taken from his own practice as illustrations, each one of which had been treated by him either in the public wards of University College Hospital, or in connection with some medical man, whose name was given as corroborative of the statements made. The results are of the most satisfactory nature.

ART. 123.—*On the treatment of organic strictures of the Urethra by Iodide of Potassium.* By Dr. THIELMANN.

(*Med. Zeitung Russland,* and *Journ. Prac. Med. and Surg.*, June 16, 1859.)

Dr. Thielmann, surgeon of one of the hospitals of St. Petersburgh, has utterly relinquished, the last thirteen years, the use of the mechanical means habitually employed for organic strictures of the urethra, which he treats exclusively by iodide of potassium. This medication has perfectly succeeded in twenty-seven cases of stricture presenting a great diversity with respect to seat, extent, structure, &c. With the greater part of the patients a more or less copious gonorrhœal discharge was present at the same time. The oldest strictures were of two years' standing, the most recent of eight months. With a great number of subjects bougies Nos. 2, 3, and 4 could be introduced without much difficulty; with two individuals a bougie No. 1 could not penetrate in consequence of the tortuous direction of the passage. The stricture had already induced a dilatation of the membranous portion of the urethra situated behind the obstacle. The seat of the strictures treated by Dr. Thielmann was sometimes the spongy portion of the urethra in the vicinity of the bulbous portion; at other times, this latter portion itself. They occupied in three cases the membranous portion; in none the fossa navicularis. On exploration, when such was possible, the strictures generally presented themselves in an annular or semi-annular form. In some patients they seemed to be composed of irregular scars, of variable shape, which could be felt by the surgeon touching externally the course of the urethra. They had all, without exception, a callous consistency.

Mr. Thielmann exhibited to each of his patients three tablespoonfuls a day of the following solution :

℞	Potassii Iodidii	. 2 dr.
	Aq. destillatæ	. 5½ oz.

He prescribed a rigid milk diet, permitting amylaceous food. When any iodic symptom manifested itself, he diminished the dose until the patient could bear a stronger one. Iodide of potassium regularly produced the effect of determining a gonorrhœal discharge, if it did not previously exist, or of increasing it, if it was already present. As the discharge took place, a softening, a melting, as it were, was effected in the inodular tissue, which constituted the stricture, and the stream of urine returned by degrees to its normal dimensions. The duration of the treatment varied from a fortnight to two months, according to the degree of the coarctation. It was sometimes requisite momentarily to suspend the use of the iodide of potassium, in order to avoid the accidents that might be superinduced by its protracted use. When the inodular tissue of the strictures was felt externally, Mr. Thielmann ordered, in addition to the external use of iodide of potassium, frictions along the part of the penis corresponding to the urethra with an ointment composed of—

℞ Potassæ Iodid. . 1 dr.
Adipis . . . 1 oz.

The gonorrhœal discharge for the most part ceased spontaneously. When it was persistent it was treated by the ordinary means.

Art. 124.—*New mode of relieving retention of Urine.* By Mr. Parker, Surgeon to the Queen's Hospital, Birmingham.

(*British Med. Journal*, May 2, 1859.)

"Within the last few days," says Mr. Parker, "I have succeeded in two separate instances, in relieving retention of urine in the following manner: A gentleman lately entered my consultation room in great pain from retention of urine. He had not passed water for many hours; the bladder was much distended. He stated that ineffectual efforts had been made to pass a catheter, during which operations he had lost a considerable quantity of blood. I attempted to relieve him by the catheter, but failed to do so; I tried instruments of various sizes and various curves, but could not succeed in passing one into the bladder. I then took a No. 2 wax bougie, and inserted a small portion of potassa fusa into the end of it, after the manner proposed by Mr. Whateley, and practised by Mr. Wade in the treatment of permanent stricture of the urethra. I well moulded the wax over all but the extreme point of the caustic, and passed it rapidly down to the point of obstruction: by pressing against this for a short time it yielded, and I had the satisfaction of finding the bougie easily enter the bladder. I directed the patient to strain as I withdrew the instrument; a stream of urine followed, and the bladder was emptied. The retention did not again occur, and very little irritation accompanied or followed the proceeding. On the next day the patient made water freely, but in a small stream.

"The second case was very similar. The patient had travelled some distance by rail. The bladder was much distended, the symptoms urgent, and a catheter could not be made to enter the bladder. A small wax bougie was armed as in the last case, passed down to the stricture, and firmly pressed against it. It yielded very shortly; the instrument entered the bladder, and a stream of urine followed its withdrawal. This patient had a second attack of retention two days afterwards, which was relieved in the same manner.

"A modification of this plan might be attempted by inserting a small piece of potassa fusa into the extreme point of a small gum-elastic catheter, and using it without the stilette. I am sanguine enough to hope that many cases of retention might be easily and quickly relieved by the simple means I have suggested, and more formidable and dangerous operations thus frequently avoided."

Art. 125.—*Extract of Belladonna in the treatment of Irritable Bladder.* By Mr. Henry Behrend.

(*Lancet*, June 25, 1859.)

Case.—The patient was a married lady, without family, about thirty years of age. Some five or six years ago she had suffered from acute dyspepsia, but shower-baths and horse exercise had completely cured her, and she had enjoyed uninterrupted good health until about two years ago, when she was suddenly, and without any assignable cause, attacked by the complaint for which she consulted me in August, 1856. Previously to its commencement, which was in May, 1857, she had always slept remarkably well, and had seldom or never been disturbed during the night; but during the last fifteen months, the irritability of the bladder had been so great as to render the immediate evacuation of its contents imperative at least three or four times during the night, and often as frequently as seven or eight times, or even more. During the day, there was little or no irritability, and the quantity of urine passed was normal, or nearly so; but in the course of the night, two or three times the natural amount was passed, pale, insipid, and, when tested, free from sugar, albumen, or other abnormal constituents. The combined effects of the loss of rest and the drain of fluid from the system had materially affected her general health. She had lost flesh, and suffered much from thirst, headache, and nausea, especially upon rising in the morning. She was much depressed in spirits, and took a desponding view as to the ultimate result of the malady. I prescribed successively the tincture of the sesquichloride of iron, compound tincture of valerian, tincture of hyoscyamus, liquor potassæ, dilute mineral acids, sea-bathing, and change of air and scene, without the least amelioration of the symptoms; and upon her return to town at the commencement of October, I decided upon giving the extract of belladonna a trial. She began taking it in doses of the twelfth of a grain three times a day in the form of a pill, and was at this period always disturbed four or five times in the course of the night, and often much more frequently. The belladonna was at once increased to the third of a grain three times a day, or a grain in all, as soon as I found that its use was not forbidden by any peculiarity of constitution. These doses were continued for about six weeks (with the occasional intermission of a day or two), at the expiration of which period its toxical effects began to manifest themselves; for though the pupils were not dilated, yet vision was not normal; black spectra appeared; the mouth and fauces were parched and dry, and there was occasional nausea. Already the improvement in the symptoms was decided; my patient slept better, and was never disturbed more than three times in the night.

As it is a recognised fact, that in order to obtain the full amount of benefit from the belladonna, it must be pushed until its specific symptoms are quite established, I now increased the daily amount to a grain and a half, in the proportions of half a grain in the morning, and one grain at nine p.m. In the course of three or four days, the pupils became dilated, the nausea extreme, and there were repeated efforts to vomit, for the most part ineffectual, but occasionally followed by a little glairy mucus. The irritability of the bladder became almost entirely subdued; she was disturbed once only, or at most twice, throughout the night, and the quantity of urine passed was normal, or only occasionally slightly increased. The belladonna was at once discontinued, the general health rapidly improved, and during the past six months the cure has been permanent, and my patient has continued perfectly

free from any recurrence of her distressing complaint, except that a slight tendency to irritability of the bladder manifests itself now and then, for one or at most two nights in succession, but passes away of itself, and is not of sufficient consequence to require any treatment.

ART. 126.—*On the employment of Electricity in the treatment of Paralysis of the Bladder and certain Vesical Catarrhs.* By M. PETREQUIN.

[*Comptes rendus*, May 30, 1859.)

After referring to the frequency of paralytic and catarrhal affection of the bladder in old persons, and to the inefficacy of the means in ordinary use, M. Petrequin lauds in very high terms the efficacy of electricity—especially the interrupted current from the ordinary induction coil. In applying the current, one of the poles (in this case a properly contrived catheter) is carried into the bladder, and the other pole is placed either in the rectum or upon the centre of the hypogastrium; and care is to be taken that the shocks be so regulated as to cause no feeling of distress at the time or subsequently. The rule is to have a feeble current, to apply it only for a short time, and to repeat the operation frequently. M. Petrequin does not cite any cases in which he has put this plan of treatment in practice.

ART. 127.—*Treatment of Impotence by Electricity.* By Dr. N. ALTHAUS.

(*Deutche Klinik*, No. 6, 1859.)

CASE.—A man, æt. 45, well built, the father of several healthy children, had suffered for twelve months from a complete absence of the power of virile erection. After a careful examination, Dr. Althaus satisfied himself that the cause of this infirmity was paralysis of the ischio-cavernous and bulbo-cavernous muscles, and he resolved to try the effects of electricity. Placing the patient in the position for lithotomy, and raising the penis and scrotum towards the abdomen, he passed slight shocks from an inductive apparatus through these muscles; and then, finding that these shocks produced no feelings of distress or inconvenience, he increased the strength of the current. Two days afterwards there was a decided erection. After the second application of the electricity, which was for ten minutes, the patient succeeded *en coït.* Two other applications of electricity were necessary, in consequence of a relapse, and then the cure was complete.

ART. 128.—*On Lithotrity.* By Mr. SKEY, Surgeon to St. Bartholomew's Hospital.

(*Lancet*, July 30, 1859.)

The following general rules are from a clinical lecture recently delivered:

"Believing as I do," says Mr. Skey, "that the operation by means of the lithotrite is applicable to the large majority of calculous affections of the bladder—that, if well executed, it is safer as regards the

life of the patient, quite as certain as regards entire recovery, and less exhausting to the system, I recommended its practice for your consideration.

"I advise your rejection of cases for lithotrity presenting the following characters :

"1. Manifest disease of the kidney,

"2. The urethra so contracted as not to admit with facility a lithotrite of ample size.

"3. The bladder so intolerant as to be incapable of retaining its urinous contents for three or four hours; and, on the other hand, a bladder of low nervous susceptibility.

"4. Much enlargement of the prostate gland.

"The quantity of water injected should not exceed four or five ounces. In many subjects, the employment of chloroform excites the bladder to contract, and the injection has to be repeated. The lithotrite, from its full size and angular form, should be introduced with more caution than is usually required on the introduction of a catheter. No attempt should be made to open the instrument in the bladder until it has been pushed thoroughly home into the organ. In the act of separating the blades, do not withdraw the upper, without at the same moment pressing the lower blade downwards towards the bottom of the bladder. If this rule be not strictly observed, the upper blade will be painfully pressed against the neck of the bladder, from which hæmorrhage may follow. The stone is to be brought into the lithotrite by pressing the lower blade suddenly, and by a slight jerk or twist of the hand, against the base or bottom of the bladder. There is neither necessity nor advantage in directing the instrument to the right or to the left. It should retain the mesial line throughout the entire operation. When the stone is caught, the blades should be screwed 'home,' lest small accumulations become large, and render the withdrawal of the instrument through the urethra difficult. At the first operation, do as little as possible. It may be deemed an experimental occasion, and it will be sufficient to break the stone once across. On all future occasions, the number of applications of the screw may be determined by the tolerance of the patient. The stone may be broken six, eight, or more times. The intervals between each other operation will vary according to the condition of the bladder, and the quantity of detritus expelled. If the quantity be considerable and the bladder quiet, the operation may be repeated in four or five days. The average interval is longer than this. Few cases pass through their course of treatment without giving evidence of irritability of the mucous membrane of the bladder, manifested by a discharge of tenacious mucus adhering to the bottom of the vessel. Unless in its aggravated form, it is not a serious symptom. It may be treated with diosma, or uva ursi, nitric acid, Dover's powder, &c.; but the best remedy is the lithotrite. I have repeatedly seen this symptom subside on the repetition of the operation. The constitutional treatment is chiefly dietetic. Diluents should be ordered largely ; and the moderate use of wine is unobjectionable. I have never seen any advantage obtained by an abstinent diet, nor any evil arise from an ordinary and habitual one. It is surprising how large a fragment may travel along

a healthy urethra. They are arrested, however, most frequently at the glands, and if a fragment cannot be extracted by a pair of fine forceps in this situation, the urethra should be divided. When fixed low down in the urethra, they should be pushed back into the bladder. This may be effected by a large catheter (No. 12), cut off straight at the point, the extremity of the instrument being supplied by a moveable knob, which is withdrawn when the catheter touches the stone. The open extremity of the instrument encircles the stone, which is forced backwards without injury to the mucous membrane. A small abscess in the perinæum may occasionally follow the violent employment of the lithotrite, or forceps, &c. It presents itself under the form of a small rounded tumour. It seldom requires active treatment, and, as a general rule, may be 'let alone.'"

ART. 129.—*Comparison between Lithotomy and Lithotrity in London and in the Provinces (males only).* By Mr. ———.

(*Medical Times and Gazette*, Aug. 28, 1859.)

The relative proportion of cases treated by lithotomy and lithotrity respectively appears to be about the same in our London and provincial institutions. The same rules of selection appear also, with some exceptions, to prevail in both, as well as in individual hospitals. Lithotrity is, as a rule, never performed in children; and the circumstance of the patient being in unusually bad health is regarded as a reason for performing lithotomy. In one or two instances, however, the reports supplied to us state that the stone was crushed because the man was thought too ill to bear the larger operation; but these are very exceptional. The selection of the one or other operation for adults in good health, appears, however, to have been very arbitrary, and has, we believe, in many instances, been decided by the patient's own preference. It does not appear, judging from the data before us, and from what we know privately, that any of our hospital surgeons make it an invariable rule of practice to employ the lithotrite in all cases of stone in adults of fair general and local health.

The appended statement gives the aggregate results of the two modes of operating:

Metropolitan.

Whole number	207	; recovered	157	; died	47	; 1 death in	4·4
Lithotomy .	186	„	146	„	40	„	4·65
Lithotrity .	21	„	11	„	7	„	3

Provincial.

Whole number	238	; recovered	207	; died	29	; 1 death in	8
Lithotomy .	222	„	195	„	27	„	8·22
Lithotrity .	16	„	12	„	2	„	8

Thus, then, we have the fact brought clearly out that of every four cases of stone in males (all ages) submitted to surgical treatment in the London hospitals, one ends fatally, while in the provincial institutions the fatality is only one in eight. Before attempting to ascertain the probable causes of this startling difference, two questions present

themselves for answer. In the first place, are the two series of cases sufficiently alike to be properly made the subjects of comparison? And, in the second place, are the data of which they consist equally trustworthy in both? The first of these we would answer without hesitation in the affirmative; the two series of cases do bear a very close similarity to each other, *i. e.* in each the relative proportions of patients at different ages closely correspond, while nearly the same rules appear to have influenced the minds of the different operators as to the performance of lithotomy or lithotrity. In the latter point, indeed, the advantage is rather on the side of the metropolitan series, since it includes a larger proportion of lithotrity cases, which, as we shall hereafter see, is the less fatal operation in the adult. In replying, or attempting to do so, to the second question, we tread on different, and very difficult ground. It must, we think, be granted that the accuracy of the two series is not equally well guaranteed. Both in London and in provincial hospitals, our statistical reports have been, in the first instance, compiled from data supplied to us by the resident medical officers of the respective institutions. Thus far, therefore, the modes of procedure, and the probability that all cases would be recorded, are the same in each. In London, however, the writer of this report was himself engaged in daily attendance on the practice of the different hospitals, and was in the frequent habit of looking through the "operation books" himself. Without making the slightest reflection on the integrity of those to whose zeal we are indebted for the provincial data, the simple statement that the additional security of completeness just mentioned was in the case of their institutions not brought to bear, will be sufficient to prove that the facts in the two series are worthy of different degrees of reliance. We may venture to strengthen the proof by stating that in certain instances cases did find their way into our London list of deaths, through our own personal supervision, which would not otherwise have done so. We shall here leave this matter, and our readers must form their own conclusions as to the allowance which ought to be made on the ground referred to.

Whatever allowance individual readers may incline to make on the score above mentioned, none can entertain a doubt that our statistics really prove that a great difference in result does obtain in our provincial and our metropolitan hospitals. The apparent difference is so great, that it is impossible but that a considerable part of it must be real. It will be seen also that it is almost equal, whether we examine the lithotrity series or the lithotomy one. To what, then, are we to attribute it? We may fairly presume that the amount of surgical skill to be met with in the two series of hospitals is equal, and we believe that the same rules of practice prevail in each, *i. e.*, the ordinary lateral operation was performed in almost all the cases. We have already observed that the ages of the patients very closely correspond. Two circumstances remain for consideration as possible causes of the difference. 1st. The provincial hospitals may possess great sanitary advantages over our London ones. 2d. The class of patients admitted under provincial surgeons may possess far better constitutions, as regards ability to bear severe operations, than do those who enter our London hospitals. Probably both these supposi-

tions are true to a certain extent, but the latter has, we suspect, vastly the wider range of influence. Let us glance at the following facts: Out of 109 children under the age of ten lithotomised in the London hospitals only 8 died, and exactly the same number was lost of 113 patients of the same age operated on in the provincial ones. Here the London fatality is 1 in 13·5, and the provincial 1 in 14; in fact, the results scarcely differ, whilst the whole number is quite sufficient to supply data for fair comparison. Now, if the sanitary advantages of the two series of hospitals were very different, ought not the effect to be at least equally apparent in the case of young children as it is in that of adults? As we leave the age of infancy, the difference, however, becomes marked, and it increases almost steadily with each decade. Between 10 and 25 the London fatality is 1 in 5, and the provincial 1 in 9. Between 25 and 45 the London deaths are exactly in twice the proportion of the provincial ones. Between 45 and 60 the difference is much greater, London losing one half and the provinces only 1 in 5. In the oldest class of patients, that is, those between 60 and 80, the metropolitan mortality reaches its alarming maximum of three fourths of the whole number, whilst in provincial institutions it is only one third. Do not these facts prove to a demonstration that there is a very great difference in the power of recovery after lithotomy, between our London and provincial patients? The adult subjects of lithotomy in London are of two classes, those who have resided in the metropolis, and those who have been sent up from the country expressly for the purpose of operation. Probably the former of these two classes would include two thirds, and the latter one third of the whole, but in this matter we have no ascertained data to guide our conjecture. We need not enlarge on the bad state of constitutional stamina in London adults of the poorer class, since it is sufficiently known. Intemperance, irregularities of all kinds, and city life do their work, and their effects usually become increasingly apparent as age advances. On the second class—that comprising cases sent up for operation from the country—we will venture one or two remarks. As a rule, we do not believe that our provincial *confrères* select their best cases to send to our London hospitals. At any rate, of this we are sure, that some of the very worst in the whole series were patients who had been so sent up for operation. Not unfrequently there is a history that lithotrity has been repeatedly tried, but that the bladder becoming more and more irritable and the patient's health failing, the case has been sent up to town for further measures. Then again, even supposing that our patients from the country were of average health, it is easy to see that their transference to the wards of a London hospital is likely to exert anything but a favorable influence. To a naturalised Londoner a London hospital is a sort of palace, but its effects are very different upon a farm labourer who has been accustomed to the air of the Kent downs.

Taking the London cases by themselves, we find that between the ages above mentioned, rather more than half (26 out of 49) die after lithotomy, while only a third (7 out of 21) die after lithotrity. It must be remembered, however, that three cases treated by lithotrity remained unrelieved, and while in more than one instance the same

patient was treated for a relapse of symptoms a year or two afterwards, his case is counted twice.

Taking the provincial cases by themselves, we find that between the ages mentioned not quite one fourth die after lithotomy (18 in 74), while the lithotrity mortality rate is only one in seven and a half (2 in 15). Two of the lithotrity patients were, however, after long treatment, finally submitted to lithotomy, and the remark made above as to the unavoidable multiplication of cases by counting the same twice, applies, we believe, with equal force to the provincial as to the London series.

Allowing, then, that to a certain extent the best cases are selected for lithotrity, we cannot say that the results obtained are very triumphantly in favour of that operation. Still the balance of evidence, especially in patients past middle life, is certainly, and beyond dispute, to its advantage.

ART. 130.—*Statistical Analysis of* 177 *Lithotomy operations in provincial Hospitals.* By Mr. ————.

(*Medical Times and Gazette*, July 2, 1859.)

The period included in the following account is from Oct. 1853 to Dec. 1858, or four years and a quarter. The hospitals furnishing the data are: the Royal Berkshire (Reading), the Bradford, the Bristol General, the Canterbury, the Cheltenham General, the Cumberland (Carlisle), the Derby General, the Devon and Exeter, the Dorset County (Dorchester), the Dundee Royal Infirmary, the Durham, the Glasgow Royal, the Gloucester, the Huddersfield, the Hull, the Leeds, the Leicester General, the Liverpool Southern and Toxteth, the Liverpool Royal, the Newcastle-upon-Tyne, the Nottingham, the Queen's (Birmingham), the Sheffield General, the South Staffordshire (Wolverhampton), the Staffordshire General (Stafford), the West Norfolk and Lynn (Lynn), the Winchester, York County.

The London list comprised a gross total of 186 cases, with 40 deaths; while the Provincial will show 175, with 22 deaths.

Before proceeding further, however, a few words of explanation are due to the reader as to the mode in which the facts to be analysed have been collected, and the degree of confidence which they claim. The data upon which our Quarterly Statistical Reports were founded, were furnished to us by the resident medical officers of the different institutions. The care and accuracy with which, in almost all instances, these statements have evidently been drawn up, enables us to rely confidently on their general correctness. It would, however, happen sometimes that, owing to a change of house surgeons or other accidental cause, the list of operations from one or other hospital might for a certain quarter not be obtainable. Several of the hospitals which, during the first part of the period mentioned, furnished us with their operations, ceased to do so after a time, and were unavoidably on our part omitted from our list. These circumstances certainly go to some extent to diminish the value of the following summary. Still we have no reason whatever to doubt but that in each instance the whole of the operations performed in any single hospital during

the time that it professed to furnish us with them were duly supplied, and without selection or omission. The periods referred to as having in some instances been omitted, did not probably differ in their rate of mortality from those which were included; at any rate, they were omitted for reasons wholly without regard to any such difference, if it existed. We believe, therefore, that although they may not be strictly and unexceptionably accurate, that the statements which follow will supply a very close approximation to the real statistics of provincial operative surgery. At any rate, they will give the reader a far better idea of what that surgery is, what its success, and what its fatality, than any other method within our reach. Before entering upon its examination, it now only remains for us to tender our best thanks, and those of the profession at large, to the many gentlemen who, without any selfish object, and in the pure love of science, have, at the cost of so much labour to themselves, put it in our power to obtain such valuable deductions.

INFLUENCE OF THE PATIENT'S AGE ON HIS PROSPECT OF RECOVERY.

Age.	No.	Recovered.	Died.	Per centage of Deaths.	—	
1	1	1	0	·00	No death	Under 10 years of age. 6 deaths in 94 cases, or 1 in every 16.
2	9	8	1	11·10	1 death in 9	
3	12	11	1	8·30	1 in 12	
4	18	15	3	16·66	1 in 6	
5 to 8	40	40	0	·00	All recovered	
8 to 10	14	13	1	7·1	1 in 14	
10 to 15	21	20	1	4·7	1 in 21	Between 10 and 25 4 in 35, or rather more than 1 in every 9.
15 to 20	6	5	1	16·6	1 in 6	
20 to 25	8	6	2	25·0	1 in 4	
25 to 30	3	2	1	33·3	1 in 3	Between 25 and 45 5 in 16, or not quite 1 in every 3.
30 to 35	4	3	1	25·0	1 in 4	
35 to 40	5	4	1	20·0	1 in 5	
40 to 45	4	2	2	50·0	1 in 2	
45 to 50	3	2	1	33·3	1 in 3	Between 45 and 60 4 in 15, or rather more than 1 in every 4.
50 to 55	3	2	1	33·3	1 in 3	
55 to 60	9	7	2	22·2	1 in 4½	
60 to 65	8	7	1	12·5	1 in 8	Between 60 and 80 3 in 17, or rather more than 1 in every 6.
65 to 70	6	4	2	33·3	1 in 3	
70 to 75	1	1	0	·00	No death	
75 to 80	2	2	0	·00	No death	
Total.	177	155	22	12·3		

Thus it would appear that in the practice of our provincial hospitals the period of life in which the lowest death-rate after lithotomy prevails is between the ages of 5 and 10. Of 55 operations performed

on patients between these ages, all but one resulted in recovery. Children under the age of 5 do not appear to bear the operation so well as those a little older, since out of 41 operations we have 5 deaths. In the periods between the age of 10 years and puberty, and from the latter to 25, the mortality is much larger than in childhood, and it rises still higher during the twenty years next following, to decline, however, with further advancing age. The table before us differs from most other statistical statements on this subject, in showing a diminished ratio of death in the aged as compared with those in the middle period of life. The oldest three patients all recovered; and while out of 16 operations performed on patients between the ages of 25 and 45, 5 ended in death, or nearly 1 in 3; out of 17, in which the subjects were between 60 and 80, the proportion was only 1 in 6. We shall at some future time show how remarkably this differs from what is found to be the case in London practice, and to offer some conjectures as to its explanation. In the mean time we will only remark, that lithotrity is practised with at least proportionate frequency in the provinces, and that it therefore is not the disturbing influence.

CAUSES OF DEATH.

We regret that we do not possess such detailed information on this head as was the case with the London operations, and that respecting several we have only been informed of the bare fact that death occurred. Under the head of "Cause of Death not Known," we shall therefore be compelled to include 4 out of the 22 cases. We have endeavoured to classify the remaining 18 in the subjoined list according to the accident or lesion to which the fatal event appeared to be mainly attributable. In many, perhaps in most, more than one had been coincidently in action. Thus, in not a few in which the immediate cause of death was pyæmia or abscesses about the bladder, hæmorrhage, which occurred at the time of the operation, appeared to have exerted an influence predisposing the patient to such lesions. The classification is, therefore, only an approximation to the truth, and must be so considered by our readers:

Peritonitis	in	6	instances
Abscesses about the bladder	„	4	„
Hæmorrhage	„	3	„
Pyæmia	„	2	„
Shock of the operation	„	2	„
Renal disease	„	2	„
Extravasation of urine	„	2	„
Exhaustion	„	2	„
Broncho-pneumonia	„	1	„

In this list several of the cases are counted under more than one head on account of several of the lesions mentioned having been combined.

ART. 131.—*Lithotrity and the removal of the Fragments at the time.* By Mr. FERGUSSON, Surgeon to King's College Hospital.

(*Medical Times and Gazette*, June 25, 1859.)

"In a case recently under treatment in King's College Hospital," writes one of the clerks, "Mr. Fergusson is employing what he terms a "favorite method" of his for the expediting of the cure. It consists in the removal by means of the lithotrite of as many fragments of the stone as can be got away. The patient in the present instance is a man of about sixty, with a large urethra and fairly healthy bladder. He has been under treatment several weeks, and the opinion formed in the first instance was that more than one stone was present. On Saturday last a third crushing was performed. The man having been put under the full influence of chloroform, the stone was broken by a large and strong instrument. A much lighter lithotrite was then introduced, and a fragment having been seized, the size of which was evidently moderate, it was dragged out. This manœuvre was repeated ten or fifteen times, and enough was removed to have made up a stone of moderate bulk. It did not, however, appear that all had been got away, as the fragments could not be made to fit so as to make up one stone, and the original opinion as to there being more than one seemed strengthened. In several instances considerable difficulty was encountered in getting the fragment seized out at the meatus, although it had slipped quite easily through the deeper tracts of the urethra. Occasionally it would escape from the grasp of the instrument, and remain impacted about half an inch from the orifice. When this happened, Mr. Fergusson employed a small scoop or a pair of common dressing forceps to effect the final removal. Of course some bleeding attended the forcible dragging of the fragments out; it appeared, however, to come almost wholly from near the meatus. On the plate, after the operation was completed, we counted six fragments, all of them of too large a size to have been voided spontaneously, and there were at least twenty others of smaller dimensions. There can, therefore, be no doubt that this plan of forcible extraction, per urethram, if safe, very greatly expedites the cure. Mr. Fergusson's dexterity in the use of the lithotrite may, it must be borne in mind, make that safe in his hands which would be otherwise in those of less experienced surgeons. Thus, although the instrument had, on the occasion alluded to, been introduced and withdrawn at least fifteen times during the sitting, yet the whole had not lasted more than about twenty minutes. The instrument seemed as if spontaneously, at each introduction, to seize a fragment of right size for extraction the moment it entered the bladder.

"Mr. Fergusson, in some clinical remarks at the conclusion of the operation, admitted that the plan he had adopted was one as yet on its trial. His own belief was, however, strong that when judiciously carried out, it very materially hastened the patient's recovery, without adding to his risks. With regard to the degree of force which might be used, he said that his rule was never to employ violence if the stone

stuck in the lower part of the urethra. By the lithotrite the size of the fragment might be estimated with a certain degree of accuracy, and if too large it should be crushed instead of being extracted. If, however, no difficulty occurred until reaching the anterior inch, he believed that forcible extraction through that part did no injury whatever. Some might incline to adopt the plan of the older lithotrists, and slit up the meatus before beginning; but he thought it unnecessary. He directed attention to the smallness of the instrument which he had used; and stated that though much too weak for crushing large stones, it did very well for the extraction of fragments."

Art. 132.—*Sequel to a case of Urinary Calculus, with vesico-intestinal Fistula.* By Mr. Charles Hawkins.

(*Proc. of the R. Med. and Chir. Soc.*, June 28, 1859.)

Case.—The patient, whose case is related in a previous volume ('Abstract,' XXIII, p. 240), died on April 19th, 1859, a year after the operation. On a p.m. examination, no stone was discovered in the bladder. The kidneys were somewhat congested, but in other respects healthy in appearance. There was an opening in the bladder at the lower part of the posterior wall, of the diameter of a goose-quill, evidently not of recent date. The bladder, corresponding to this aperture, was intimately united by old adhesions to that part of the circumference of the sigmoid flexure of the colon that lies nearest it.

The aperture in the bladder communicated with the sigmoid flexure opposite their point of union. Above the point of communication of these two viscera, for the extent of about an inch, the canal of the sigmoid flexure was somewhat constricted; but the constriction was apparently due to the adhesion and subsequent contraction of these viscera, as beyond the point where the adhesion between them existed the calibre of the sigmoid flexure appeared normal. Below the orifice of communication between the bladder and colon, the canal of the intestine was greatly constricted to the extent of an inch and a half in length; this stricture appeared to depend upon great condensation and subsequent cicatrization of the submucous and muscular tissues of the bowel at that point. The mucous membrane of the intestine above the seat of stricture presented in many places pouches, varying in size from a pea to a filbert, and formed by the protrusion of this coat externally. Opposite to the stricture, it appeared to be in every respect quite healthy, but very densely convoluted.

Below the seat of stricture the bowel was considerably dilated, and had, during life, apparently acted the part of a second bladder, as from the symptoms described by the patient, the urine used to accumulate there in considerable quantities, being passed per anum.

ART. 133.—*Large Calculus removed from the Urethra of a boy on whom Lithotomy had been performed five years previously.*—By CHRISTOPHER HEATH, Esq., Demonstrator of Anatomy in the Westminster Hospital.

(*Lancet*, Aug. 27, 1859.)

JOHN H—, æt. 14, was sent to me by Dr. Grigor, of H.M.S. *Queen Charlotte*, having been refused admission into the navy on account of a tumour in the perinæum, which rendered him unfit for the service. The tumour was quite hard, of about the size of a walnut, and projected at the back of the scrotum, in the median line, but was capable of being moved slightly from side to side. It was apparently a calculus impacted in the urethra; and the diagnosis was confirmed by passing a catheter, which impinged upon the stone. There was a constant mucous discharge from the urethra, and the stream of urine, although of considerable size, was twisted. The boy said that it had existed eight years (subsequently found to be an error), and gave him little inconvenience except somewhat sharp pain occasionally after passing urine. He was anxious, however, to get rid of it in order to go to sea.

The stone being evidently too large to admit of extraction per urethram, I resolved to remove it by incision; and accordingly, on June 29th last, the boy being under the influence of chloroform, and in the lithotomy position, I steadied the stone with the left hand, and cut upon it in the median line. The incision was about two inches long, and encroached on the back of the scrotum for about half that length. The wall of the urethra was found to be very much thinned, and was laid open (in the bulbous portion) to the extent of about an inch and a half, when the stone was easily removed with the finger. One small artery required ligature, and a sound passed into the bladder detected no other stone. The calculus was of remarkable shape, closely resembling the head and beak of a bird. It measured rather more than two inches in length, and not quite an inch and a quarter across at its broadest part, and was placed with the large end farthest from the bladder, and its upper surface flattened against the corpora cavernosa, by which it was distinctly marked. It weighed when extracted above seven drachms, but when thoroughly dried exactly five drachms and a half.

The boy made a perfectly good recovery, but the wound was rather long in healing, probably owing to the size to which the urethra had been dilated. A day or two after the operation there was swelling of one of the testes, with a little inflammation about the scrotum, but this soon subsided. No catheter was introduced after the operation; but about three weeks after, the urine not coming so fully by the urethra as I wished, a No. 5 elastic was introduced, and retained for a few days. The boy was finally discharged on the 11th August, with the wound healed, and very little thickening remaining, and able to pass a good stream of urine.

Having learnt from the patient that some years ago he was in King's College Hospital, I searched the register of that institution, and found that he was admitted, under Mr. Partridge's care, in January, 1854, with stone in the bladder, the symptoms of which had existed three years. Mr. Partridge performed the usual lateral operation of lithotomy (the scar of which can still be seen) on the 3d of February, 1854, and extracted one stone. The boy made a good recovery, and was discharged on March 10th.

This case is unusual, both from the shape and size of the stone, and from the fact that the patient had previously undergone lithotomy. The only parallel case I have been able to find is one related by Mr. John Ward, of

Bodmin, at the North London Medical Society (The Lancet, Nov. 4th, 1854), in which he removed a calculus "from the cellular tissue of the scrotum" of a man who had been lithotomized three years previously.

On section, the calculus appeared to be composed of phosphates, with a few streaks of uric acid (as, for instance, in the dark portion near the apex), and it would appear probable that when of small size it had passed through the neck of the bladder, dilated by the previous operation, and become fixed in the bulbous portion of the urethra, the original nucleus being quite at the anterior part of the section of the stone, and its bulk formed by deposit reaching backwards towards the bladder. It is remarkable that the boy should have suffered so little inconvenience, and been able to pass so good a stream of urine, with the urethra so completely blocked up.

Art. 134.—*Treatment of Hydrocele by Electricity.* By (1) Dr. Rodolfi; (2) Dr. Petrequin.

(*Gaz. Méd. de Lomb.*, Sept. 20, 1858; *Archiv. Gén.* March, 1859; and *North Amer. Med.-Chir. Rev.*, July, 1859.)

1. Sustained by the fact of the galvanic current decomposing fluids, Dr. Rodolfi has applied this means to the treatment of serous effusions into the sac of the tunica vaginalis, which sac becomes so changed under the influence of electricity, as to arrest the abnormal secretion.

In support of this novel treatment, the author reports four cases of hydrocele, three being radical cures. The subjoined case will serve as an illustration of the treatment.

A cabinet-maker, thirty years of age, had suffered for fifteen months from a hydrocele of the left side, which had attained the size of the head of a newly-born child. Being placed in a convenient position upon an elevated bolster, with the thighs slightly flexed and widely separated, two platinum needles were introduced, as far as possible from each other, into the scrotum. To the complete astonishment of all present the hydrocele had disappeared, and in two days the patient left the hospital completely cured. The author saw the case several months afterwards, and convinced himself that the cure was a radical one.

The apparatus employed by Dr. Rodolfi consists of the platinum needles, of the screws, conducting wires, and battery of Bunsen, or Daniel, composed of from two to four simple circles; the latter apparatus being preferable on account of the acid not becoming troublesome. The operation consists of four stages—First, introduction of the needles; second, connection of the battery; third, change of the poles; and fourth, withdrawal of the needles. The needles should be guarded by small rings, a short distance from their points, in order to prevent them from penetrating too deeply. During the whole proceeding it is necessary to compress the scrotum slightly, and be careful lest the vermicular movements of the dartos force the needles out of place.

2. M. Pétrequin, of Lyons, in a note to the *Académie des Sciences*, January 17, 1859, states that, in view of the great changes produced by electricity upon absorption and secretion, he conceived the idea

of applying this fluid to the treatment of dropsies, and particularly of hydroceles. In 1849 he operated upon a patient, forty-five years of age, who had an old, voluminous hydrocele. The poles of a Bunsen's battery were applied, one to the base, the other to the summit, of the tumour, for about half an hour. The next day the hydrocele had disappeared, and no relapse had taken place at the end of a month.

Art. 135.—*On the Iron-wire Seton in Hydrocele.*

By Dr. Gillespie, Surgeon to the Royal Infirmary, Edinburgh.

(*Med. Times and Gaz.*, Sept. 10, 1859.)

The result of Dr. Gillespie's experience is utterly opposed to that of Dr. J. Young (v. 'Abstract,' XXIX, p. 147).

Case 1.—A. K—, æt. 68, a labourer, was admitted into the Royal Infirmary, January 26, 1859, with an indolent ulcer of the leg, and a hydrocele of the left side, of four years' duration. As regards the hydrocele, palliative treatment only has been adopted, it having been tapped about twice a year. It is now of the size of a large cocoa-nut. On February 10th, two iron wires were passed through the anterior part of the hydrocele by a long lance-pointed packing needle. The fluid trickled through the openings thus made, and the contents were soon evacuated. The scrotum was then supported by bandages, and the patient kept his bed. Eighteen hours afterwards, the left side of the scrotum was swollen to nearly the original size of the hydrocele. The swollen part very hard, but not very tender to the touch. Twenty-four hours after its introduction the seton was removed.

No symptomatic fever followed, and under rest, fomentations, and bandaging, the swelling satisfactorily subsided. For a week thereafter the case was exhibited to the students as a radical cure of hydrocele by the metallic wire; but, unfortunately, symptoms of a reappearance of fluid began to show themselves, and by the 9th of March, the tumour was as large as ever. The iron-wire seton was again introduced in a similar manner, but involving a larger portion of the sac, and it was determined to retain it longer. Thirty hours thereafter the parts were hard and swollen. The seton was removed on the expiration of forty-eight hours from its introduction. The progress of the case seemed satisfactory till the evening of the second day, when high fever set in, the pulse being 130, the tongue dry and furred, and the scrotum very painful and tender.

The tumour increased in tenseness, and an obscure feeling of fluctuation gradually became developed. A free incision was made, and a quantity of very fetid, sloughy, purulent matter was evacuated. The cavity of the tunica vaginalis was eventually filled up by granulations, and the patient left the hospital on April 24th, his cure by the wire seton having occupied exactly seventy-three days.

During my treatment of this case, but, unfortunately, before its failure, another opportunity presented itself in private practice, for my putting to a test the value of the wire seton. I consider the following case a most instructive, and, indeed, conclusive one, for I was enabled to institute a comparison between the simple tapping, the tapping with injection of iodine, and the wire seton.

Case 2.—J. P—, æt. 68, a master shoemaker, of regular habits. The patient applied to me for advice, owing to his suffering much inconvenience and difficulty in making water. I found this arose from large hydroceles on

either side, which almost completely concealed the orifice of the penis. On the left side the tumour was of an oval shape, on the right it was more pyriform. I determined on passing the wire seton through the left side, and accordingly did so in the way recorded in the previous case. On tapping the lower part of the right side, it became evident that a large hydrocele of the cord also existed, so, leaving alone the tunica vaginalis after its evacuation, I tapped and injected about half a drachm of the Tinct. Iod. into the hydrocele of the cord. During the first hour or two, the patient complained most of the injected tumour, but before evening the pain had much subsided. Next day the scrotum was as large as ever, most tender over the seton. The following day, forty-eight hours after its insertion, the seton was withdrawn, and the scrotum was well fomented. On the third day, the scrotum over the place of insertion of the seton was very red and painful, while the hydrocele of the cord felt solid, but comparatively free from pain. The hydrocele of the right side was much smaller in size. It is needless to follow this case very minutely, suffice it to say, the sac of the hydrocele, through which the seton was passed, suppurated, requiring two different incisions for the evacuation of matter, and taking nearly three months ere it became perfectly healed; the serous fluid of the hydrocele on the right side was re-absorbed and has never reappeared; while all that can at present be felt of the hydrocele of the cord is a slightly hard, but not painful, lump, about the size of an almond, lying at the upper part of the scrotum.

It will be seen from the details of these cases, that the treatment by the wire seton is not always such a simple, painless, and effectual remedy, as its advocates would make out. On none of the three occasions on which I used it was it allowed to remain so long as in all the cases recorded by Dr. J. Young, yet suppuration of unusual severity occurred twice. The uncertainty of the method may be shown by what took place on removal of the seton, at the end of twenty-four hours. An apparent cure was effected, and had it not been that the patient was kept in hospital by his sore leg, I might still have been under the delusion that I had achieved a triumph with the metallic suture; and the patient by his dismissal, cured, might have been spared a long subsequent course of suffering.

I suspect if Dr. J. Young will gather together his cases of cure at the end of a few months' time, he will find several in the same predicament as the patient of whom he reports on July 30th, 1859:

"I have operated on another patient with equal success. The patient was by trade a smith. The hydrocele was produced by a severe stroke. This patient, after being cured, became careless, got intoxicated, and received another blow, which reproduced the disease a month or two after being cured."

If such a radical cure is to involve the necessity of the patient's avoidance of carelessness, his abstinence from drink, and freedom from blows, the morals of the individuals afflicted with hydrocele must also be taken under treatment.

(c) CONCERNING THE UPPER EXTREMITIES.

ART. 136.—*Fracture of the Forearm from muscular exertion.* By Dr. HUMPHRY, Surgeon to Addenbrooke's Hospital, Cambridge.

(*British Med. Journal*, July 16, 1859.)

Many examples of fracture of the humerus from muscular action have been recorded, but very few of fracture of the other long bones:

indeed, we do not know of any, except two cases in which the femur was broken during a violent spasm. In the present case, each bone gave way at the narrowest part of the shaft; which accords with the observation that, in adults at least, the narrowest part of a bone is also the weakest part.

Case.—A healthy and moderately strong man, æt. 36, came to the hospital May 25th, 1859, stating that ten weeks previously, when he was shovelling earth with a spade, the spade caught against a root in the ground, and the jar broke his forearm. It was treated as a fracture, with splints, &c., by a surgeon. The radius was broken a little below its tubercle, and the ulna about an inch and a half from its lower end; and the position in which they had united was not very good, there being a marked projection of each bone at the situation of the fracture, on the palmar aspect of the forearm. There was, in addition, as a consequence of the fracture, paralysis of the extensores ossis metacarpi and primi internodii pollicis: the cause of this was not very clear.

Art. 137.—*On amputation at the Wrist-joint.* By Mr. Nathaniel Ward, Assistant-Surgeon to the London Hospital.

(*Lancet*, May 21, 1859.)

In irremediable injuries of the hand, amputation at the wrist-joint appears to be preferable to the removal of the mutilated part by an operation performed at the lowest part of the forearm—a practice still recommended by some surgeons at the present day. In the former proceeding, if the steps necessary during its performance are carefully attended to, the inter-articular fibro-cartilage and sacciform synovial membrane between it, the radius, and the ulna, are left uninjured; and when the stump has healed, the rotatory movement of the one bone on the other is more or less preserved, and consequently a more extended range of movement allowed to any mechanical appliance made use of as a substitute for the deficient portion of the limb, than if amputation had been had recourse to through the lower part of the radius and the ulna, in which instance anchylosis between them would be likely to result.

"Amputation at the wrist-joint is best performed by making a dorsal and palmar semi-elliptical flap. The apices of the styloid processes being taken as the guide for the limits of the incisions, the first incision is made over the back of the hand when in a state of flexion, its most prominent part being about three quarters of an inch from the carpal surface of the radius. The skin and soft tissues beneath it are then dissected from before backwards, and the joint is opened by a division of the dorsal ligaments. The hand is then placed in a state of supination, and extended, in order to render tense the flexor tendons; and a similar flap, but more extensive (the prominent part of its border being on a line with the lower third of the carpus), is made from the palm, by dissecting the soft tissues in a similar manner from before backwards. The first part of this flap is to be made of skin and connective tissues only, the flexor tendons being divided about a quarter of an inch below the joint. The palmar and lateral ligaments are then cut through, and the operation is finished.

"By this method of operating two neat flaps are made, and the border of one can be brought into accurate apposition with that of the other. This cannot be effected by the ordinary method of proceeding, which consists in first making a dorsal flap, then entering the joint, passing the knife between the carpus and bones of the forearm, and finishing the operation by carrying the instrument from behind forwards through the palm, and so making the anterior flap. The objections to this method apply only to the second part of the operation. The hand being then in a state of flexion on the forearm, in order to admit of the easy insinuation of the blade of the scalpel above the upper row of carpal bones, the inter-articular fibro-cartilage is apt to be injured by the edge of the cutting instrument. The tendons of the flexor muscles, being in a state of relaxation, are also apt to be drawn before the scalpel, and after having been cut through to require subsequent shortening; and, in consequence of the prominence of the pisiform, unciform, and trapezium bones, the resulting cutaneous flap would be more or less angular and jagged, and properly here and there button-holed, thus interfering with and retarding the reparative process."

These remarks are illustrated by four cases.

Art. 138.—*Avulsion of the Arm and Scapula.*
By Dr. H. B. Horlbeck.

(*Charlestown Med. Jour. and Rev.*, July, 1859.)

This case occurred in the practice of the author's father, Dr. Elias Horlbeck, of Charleston. Only three cases of the same kind appear to be on record.

Case.—On the 11th of December, 1857, my father, Dr. Elias Horlbeck, was called to visit Cæsar (belonging to Mr. T. B. Lucas), at West Point rice mills, who was reported to have been grievously wounded in some machinery at the mill. He arrived very soon after the accident and found the patient to be a muscular negro, from thirty-five to forty years of age, who, while putting pounded resin upon a twelve-inch leather band (to keep it from running off), in revolution round a wheel in motion, had his hand engaged between the band and wheel. His efforts to disengage it were unsuccessful, and the hand, fore-arm, arm, &c., passed rapidly between the wheel and band. It was carried round until the shoulder came to a large beam which stood up and down alongside of the wheel, about one and a half inch from it. His body stopped, of course, as soon as it met with the resistance of the timber, and his arm, carried on in the revolution, was torn from the trunk at the shoulder. He fell to the ground from the platform on which he was standing, about three or four feet high, got up, unassisted, and walked to the outside of the door of the mill, a distance of about twenty or thirty yards. Here he became faint, and fell to the ground; he was immediately taken up by some of the workers of the mill, and removed to the hospital on the premises, where I found him a short time afterwards, having arrived there a few minutes after my father. On examination an irregular, oval wound disclosed itself, the greater diameter of which was from above downwards. It extended from the humeral end of the clavicle (which was covered by skin), to the lower border of the axillary space, for about six inches, and from side to side about three inches, in the site of the axilla. The surface of the wound

was covered by a thin coagulum of blood, and the extremities of three or four large nerves of the axillary plexus, were lying bare, like whip-cords over it. The depth or centre of the wound was filled up by a rather thicker clot, which could be distinctly seen moving up and down with each pulsation of the axillary artery. The patient lay on his left or sound side, with his clothes on, as when he fell. He complained of some pain from the soreness of the wound, but said that he suffered no pain at the time of the accident, and only discovered his loss as he saw his arm fall out from the wheel when brought around by the revolution of the band. His pulse was beating naturally, seventy-six strokes to the minute, regular, and of good firmness. He had lost but little blood, the quantity could, of course, not be exactly measured, but there was a coagulum on the floor of the mill, where he first fell, amounting to about a pint or two. He had on a cotton shirt and an under one of close-fitting flannel. These were both torn through circularly, at the shoulder-joint, and were more or less stained by blood, but not by any means saturated. Without disturbing them, further than to cut away enough to expose the entire extent of the wound, a soft, folded linen cloth, dipped in cold water, was applied, and he was made as comfortable as possible.

The question now came up for consideration whether it would be advisable to disturb the parts and attempt to take up the main artery, or to submit the case to the efforts of nature. The patient being quiet, and no immediate indication for interference presenting itself, the latter course was decided on. The reasons for so doing were the fact that on examining the artery on the separated arm, it was found to be divided low down, where the axillary becomes humeral, leaving considerable interval up to the next collateral branch, amply sufficient for the formation of a clot, and the effusion of plastic lymph for its permanent closure. The portion, too, on the arm was not gaping, as when an artery is cut across, but was closed by the external cellular coat being drawn out to a finely closed point, and twisted, closing its extremity as if by torsion. A similar condition, it was expected, existed at the extremity within the wound. These circumstances, with the recollection that in the celebrated case of Samuel Wood (known as the Cheselden case), analogous to the present, no after bleeding had taken place, induced us to leave this large artery untied.

The care of the case was confided to me, with instructions to restrain any hæmorrhage which might arise, until assistance could be obtained. The circulation continued during the afternoon, natural. The patient had a good, firm pulse, with normal warmth of skin, no shock was manifest, and he was very quiet, complaining only of soreness, and moaning now and then. He was directed to have a full dose of Tinct. Opii given him, and to be kept in the greatest quiet.

I was detailed, in company with my fellow students, Messrs. Palmer and Cain, to sit up with him, in the event of accident, being provided with all the means and appurtenances for arresting hæmorrhage. We watched the case with great interest and some anxiety, but happily the necessity did not occur, and we were not troubled on that score. He slept most of the night, with little or no restlessness. The cold cloths were removed as soon as they became dry, and fresh ones substituted; and towards morning thirty drops more of laudanum were given him. The weather was very cold.

December 12th.—On examination to-day, the surface of the wound presented a similar appearance to that of yesterday. The superficial coagulum still covering the wound, and the arterial pulsation very apparent, but the extremity of the artery was completely covered by the clot, and could not itself be seen. In the situation of the vacancy left by the abstraction of the scapula,

behind, a large tumefaction had taken place, occasioned by effused blood in a coagulated condition. Anteriorly, in the situation of the pectoral muscles, the swelling was slight, there being no effusion here in consequence of no cavity being left by tearing out of the muscular substance. General condition of the patient very satisfactory, no constitutional or febrile disturbance having been set up. The pulse was rather stronger than natural, not frequent. There existed no thirst, and he experienced some desire for food. In the evening thirty drops of Tinct. Opii again administered, to ensure quiet. The cold-water applications constantly applied.

13th. — To-day there occurred no circumstance requiring interference, except the removal of his bloody clothes, which had become dry and stiff, and which had not been changed from fear of disturbing him. No pain or inconvenience from the wound. He complained of a lapsided feeling of uneasiness, caused by his having to lie principally on his left side and back. Some serous exudations occurred to-day from beneath the skin on the back. Gruel, and bread, and tea, for nourishment, were all that was given him. His bowels were moved naturally, without assistance. There is no necessity to pursue the daily report of his case, as no symptom occurred worthy of being detailed.

16th.—The whole of the external coagula had by this time separated. Suppuration from the region of the scapula commenced, and coagula of blood, mixed with blood, could be pressed out. No discharge from the region in front. The tumefaction in the region of the pectoral muscle subsiding. The pulsations of the artery were by this time not so marked. The great apprehension of secondary hæmorrhage slowly diminished, and we began to indulge a confident hope that we should escape so disastrous an event.

Up to this time I had been with him a great deal, sharing the nursing with my fellow students, and no drop of fresh blood had issued from the wound. Our patient was seated up a short while in bed, and was as cheerful as if labouring under an ordinary and trifling wound. From this time long, adhesive straps were laid across the wound, approximating the edges, and far enough posteriorly to exert some pressure upon the cavity left by the torn-out scapula.

20th.—Discharge diminishing from the sinus on the back; whenever it was dressed the purulent contents were pressed upwards, then outwards. From this time there was a gradual contraction of the sinus.

29th.—The skin had entirely adhered to the parts beneath, and only the space left by the loss of the arm in front to be healed. This was filled with healthy granulations, and rapidly progressing to cure.

January 20th.—Six weeks after the accident the parts were entirely healed over, and the patient was walking about attending to business.

Upon inspection, the limb presented the appearance of having been subjected to much pressure. None of the bones of the arm or fore arm, however, were fractured. The scapula, on the contrary, was broken in a good many places, probably on account of its irregular shape, and from the amount of pressure which it had been subjected to in passing between the wheel and band. The upper part of the arm was entirely denuded of skin, as though it had been separated to form a flap for the stump; it was torn off below the shoulder-joint in an oblique direction, the greatest deficiency being on the inner side of the humerus, leaving the cellular sheath of the vessels bare. On separating it, the extremity of the artery was found free from cellular connexions for about one fourth of an inch. The mouth of it was not open and gaping, as though a clean cut had been made, and the end presented a cone-shaped appearance, closed by a slight twisting, as if by torsion. The external coat and sheath being drawn to a fine point, an inch was cut off and put in spirits. The entire plexus of nerves were separated below the level of the

head of the humerus, accounting for the length of the nerves remaining on the trunk.

Muscles left entire on the avulsed arm.—Infra spinatus; teres, minor and major; all of the deltoid, with the exception of a few fibres at its insertion into the clavicle; supra spinatus, very much torn, but all brought away; about three inches of the latissimus dorsi came away with the arm; same quantity of the great pectoral; no traces of the lesser pectoral, the coracoid process being bare at its point of insertion.

Neither could any part of the rhomboidei be seen. Three inches in width of the whole insertion of the serratus magnus was torn off with the arm. The teres muscles, although both very much lacerated, came away entire.

The coracoid process of the scapula was broken off at its base, but kept in position by the short head of the biceps. The infra spinal fossa was very much broken up, the spiculæ running parallel with the outer border of the scapula. Posterior portion of the scapular border, one and a half inches, detached from the body of the bone, but connected by muscular tissue.

The posterior superior angle, corresponding to the attachment of the levator anguli scapulæ, cannot be found, and we suppose it to be the only portion of the scapula which may have been left behind.

The entire clavicle left on the patient separated at its articulation with the acromion.

(D) CONCERNING THE INFERIOR EXTREMITIES.

ART. 139.—*Simple Ulcers of the Legs treated by Iodide of Potassium internally, without rest.* By Drs. TIGE and TRASTOUR, of Nantes.

(*Journ. of Pract. Med. and Surg.*, July 7, 1859.)

Every method of treatment directed against diseases frequently observed in the labouring classes, and which does not compel them to interrupt their daily occupations, deserves favorable notice. Thus Baynton and Ph. Boyer rendered a great public service in discovering and propagating the treatment of ulcers of the legs by the application of straps of adhesive plaster. This very year, we saw the late Ph. Boyer, but a few months before his death, apply this method which Roux imported from England in 1814. He began by cauterizing deeply the sore with lunar caustic, and then with straps of plaster about an inch in breadth, and six or eight inches longer than the circumference of the limb, he covered the ulcer with a series of imbricated rings, the uppermost of which reached about an inch above the sore, and the lowest strap as far below. A roller or an elastic stocking was afterwards applied to the leg and foot, and was preserved night and day. The apparatus was removed after forty-eight hours, and subsequently at irregular intervals whenever the patient complained of pain. Since the year 1832, when Ph. Boyer proposed to the *Conseil général des Hôpitaux* the adoption of this method, and also that individuals, bearing ulcers of the legs, should in future be treated only as out-door patients, the duration of the treatment has been on the average twenty-six days. In the wards of Professor Roux and Velpeau, where this method was adopted, and where moreover the patients kept constantly in bed, fifteen days was the mean average of the

same treatment. It is, however, a fact proved by observation, that the cicatrix in the first instance is stronger, more supple, and resists better than the scar formed while the patient was confined to his bed. Boyer's treatment leaves, therefore, fewer chances of relapse, and further, the invalids are permitted to walk, a twofold advantage which cannot be too highly appreciated in the case of indigent persons.

However, if Baynton's method is in many instances productive of beneficial results it occasionally fails even in cases which are under no specific influence: it is therefore useful that the surgeon should have at his disposal some other means possessed of the same advantages, and according to two respectable practitioners of the city of Nantes, Drs. Tigé and Trastour, iodide of potassium supplies the required desideratum.

In a recently published paper, Mr. E. Trastour states that for the last ten years Dr. Tigé has been in the constant habit of exhibiting iodide of potassium for the treatment of ulcers of the legs, without once having failed in obtaining a cure. The author estimates at upwards of twenty the number of patients who have recovered in spite of the most adverse circumstances. The following is a specimen of the cases recorded in Mr. Trastour's publication.

A husbandman, æt. 55, was affected for ten years with an ulcer situated on the internal surface of the lower half of the left leg; the sore was broad, its fundus was of a purple hue, its depth five lines, the secretion sanious and reddish: the skin around it was tumefied, and covered a vascular network of varicose veins which extended as far as the foot. On April 26th, Mr. Tigé prescribed from half to three fourths of a drachm of iodide of potassium daily, fomentations with the decoction of walnut-tree leaves, and pressure with a linen roller. On May 8th the ulcer was almost healed, but the skin being still tight, red and shining from the foot to the middle of the leg, the treatment was persevered in, with the addition of linseed-meal poultices. On May 22d the wound was entirely cicatrized, and the patient, who during the whole time of the medication had not interrupted his agricultural labours, walked eight miles without the least pain, for the purpose of exhibiting his leg.

Mr. Trastour relates seven or eight equally satisfactory cases which occurred in his own practice. He further remarks, that the method towards which he calls the attention of the profession prevents in no wise the application of topical remedies, which alone in numerous cases are sufficient to ensure success; but the facility, speed and solidity of the cure due to iodide of potassium, united with external applications, in cases in which the latter would have been inefficient, seem to him unquestionable.

The doses in which Messrs. Tigé and Trastour exhibit the drug are from half a drachm to one drachm daily; in severe cases, Mr. Trastour has given as much as one and a half drachm, a quantity he has never exceeded. He prescribes it in water, a tablespoonful to every quarter of a drachm before meals. When the medicine is prescribed in large quantities, two ounces for instance at a time, the apothecaries of Nantes have consented to sell it at the low price of two pence a

drachm, to poor persons. On the average, the cost of the treatment is from one penny to three pence daily during a month or two, a very moderate expenditure, when it is further considered that the patient not being reduced to inaction, is enabled to earn his livelihood.

Art. 140.—*On the treatment of Fracture of the Thigh.*
By Dr. G. F. Shardy, Resident-Physician in the New York Hospital.

(*New York Journ. of Med.*, March, 1859.)

Dr. Shardy is speaking of the mode of treatment in practice in the New York Hospital since 1837, when Dr. Gordon Buck substituted Dr. Physick's apparatus (a modification of Desault's) in all its details. "This apparatus consisted of a long outside splint, reaching from the axilla to eight or ten inches beyond the foot. It was perforated at its upper end with two half-inch holes for the purpose of securing the ends of the counter-extending perineal strap, and the extending band, formed of a silk handkerchief, was passed over a block that stood out from the splint below the foot, being secured finally in a hole further down at the lower end of the splint. There was also a short splint reaching from the perinæum as far as the inner ankle, and a body-belt, passing around the thorax, tacked to the upper end of the long splint. In addition to all this, chaff pads were interposed between the splints and the limb. In applying the splints, they were first rolled up in a splint-cloth, and well secured in place by four separate bands passing around the whole apparatus.

"After making use of the apparatus for some time, it was found to be defective in many particulars; for instance, the readjustment of the splint-cloth was found to be very troublesome, as it had to be repeated daily. The first improvement, then, of Dr. Buck, was the substitution for these cloths of pads, which were fastened to the splint. The next improvement made by the doctor was a pocket in the body-belt, and to the lower edge of this pocket were fastened buckles for the counter-extending strap. By this arrangement the splint could be removed for the purpose of readjustment without disturbing in any way either the belt or strap.

"Notwithstanding the utmost care and pains bestowed on the adjustment of the extending band to the foot, it was found impossible to prevent sloughing and excoriation, either above the heel, or over the instep. Owing to the evil consequences of such extension, it was finally supplied by well-adapted lateral pressure, the limb having been previously extended. This being the case, it was necessary to reapply the pressure daily. This method was persevered in for some time, but was at length abandoned for the use of the adhesive plaster as a means of extension. It was first employed in 1850, during the residence of Dr. Frederick D. Lente, now of Cold Springs, Putnam County. This gentleman, by his zeal and intelligence in its application, successfully inaugurated its use in this institution, as a valuable auxiliary in the treatment of this fracture. Buck's modification of Physick's Desault is certainly a triumph in modern surgery, so far as it relates to shortening and deformity. I have now noticed the

principal modifications of Physick's splint; there are, however, several minor ones, which will appear in the subjoined description of its mode of application.

"When a patient is admitted with a fracture of the thigh, there being generally a good deal of swelling present, the limb is placed upon the double inclined plane until all the tumefaction has subsided. Then he is prepared for the application of the straight apparatus. The first step consists in the preparation of a double band of adhesive plaster about three inches in breadth, which is cut long enough to extend from below the point of fracture on either side of the limb, forming a loop underneath the foot, a sufficient distance from the sole to allow of the introduction of a square block. This block is a little broader than the foot, and serves to prevent the pressure of the adhesive bands over the ankles, and also affords a firm point, to which is attached a short cord for extension. This adhesive strap is applied smoothly to the sides of the limb, and a bandage applied over it, leaving the loop free, extension being kept up in the mean time by an assistant. The body-belt and perineal strap are next adjusted, after which the coaptation splints are applied in the usual way around the seat of fracture. Then the upper end of the long splint is placed in the pocket of the body-belt, the limb drawn down as far as possible, and kept fully extended by means of a stout cord over the footpiece. This cord is attached to a ring in a large wooden screw, which plays through the block, standing out from the internal surface of the splint. Next the inside splint, extending from the groin to the malleolus, is applied; pads of blanket are then stuffed on either side to adapt the splint to the inequalities of the limb. All this having been done, the last step in the operation consists in binding the splints together, which is accomplished in the following manner. Three strips of bandage are passed at equal distances from each other behind the limb; one just below the trochanter, another just below the knee, and a third above the ankle.

"The ends of these strips are then brought forward between the limb and the splints, carried over the anterior edges backward over the outside of the apparatus, crossed behind, and finally brought forward around the whole again and tied in front. By this arrangement a sling apparatus is made for the whole limb, at the same time the splints are nicely secured to each other. The extending force is regulated by means of the screw through the block. This block, I should say, slides in a fenestrum, being secured at any part by a screw arrangement, by which means the proper distance between it and the foot can be regulated in order to have the full advantage of extension.

"This, then, constitutes Buck's modification, in other words, the New York Hospital splint, which, since its first introduction into practice, has never yet betrayed the confidence that has been placed in it. Perhaps the greatest addition toward perfection that it has had was the employment of the adhesive plaster; since that time, the results may be judged of from the following statement of seventy-four cases which involved the shaft of the femur, exclusive of either extremity. These cases are taken in the order of their occurrence from the hospital records.

"Seventy-four cases have been collected.

"Of this number, nineteen resulted without any shortening, the shortening in the remaining fifty-five averaging less than three-quarters of an inch. The ages ranged from three to sixty-four years. Fifty-seven were over twelve, and seventeen under that age. Of the fifty-seven there was no shortening in thirteen cases, but in the remaining forty-four the shortening was a fraction over three-quarters of an inch. Of the seventeen under twelve years of age, six resulted without shortening; the remaining eleven averaging less than half of an inch shortening."

ART. 141.—*Popliteal Aneurism treated by Compression and Manipulation.* By Mr. TEALE, Surgeon to the Leeds General Infirmary.

(*Medical Times and Gazette*, March 12, 1859.)

Joseph M—, æt. 48, a labourer, who had been discharged from the army five years ago, was admitted into the Leeds Infirmary, on October 26, 1858. Three months before admission he first observed a slight swelling of his left leg, which was soon followed by pain around the knee and along the calf. He attributed his ailment to a sprain received the day before, while he was exhibiting to his companions a piece of military drill, consisting of arching the trunk forward and backward so as to touch the ground with his hands in both directions. Two or three days afterwards he discovered a small prominence, like a marble, in the ham, which has continued to increase until the present time. It is a remarkable fact, that during the Crimean War, Mr. Teale had at one time in the hospital three cases of popliteal aneurism, the subjects of them all being militia men. On the admission of M— into the Infirmary, an oval tumour, about the size of a small lemon, occupied the left ham, and exhibited the usual signs of aneurism.

Oct. 26th.—On this day at noon, treatment by pressure of the artery as it passes over the pubes was commenced by means of the fingers, several students having kindly undertaken the treatment in turns.

30th.—This treatment was continued during twelve hours of the day, and left off during the night, until the present date. The tumour has become a little smaller, and perhaps harder; but as the improvement is not greater than has been frequently derived from mechanical pressure, the gentlemen were released from their compressing duties, and pressure by the ring tourniquet at the upper and middle portions of the thigh was substituted for manual pressure. The patient was taught the course of the artery, and was directed to vary the seat of pressure from time to time as the part became painful. He was, moreover, instructed to leave off the pressure at night, so as to secure sufficient rest.

Nov. 2.—Size of tumour not much lessened, but its walls feel thicker; pulsation is somewhat less, and is controlled by a slighter amount of pressure. At the outer side of the knee a branch of an artery can be felt pulsating.

5th.—Another enlarged anastomosing branch felt at the inner side of the knee.

9th.—Tumour slightly diminished in size, and more firm to the touch.

12th.—Not much change since the last report. Mr. Teale now made an attempt to disturb the fibrin within the sac by moderate manipulation.

14th.—No material change since the last report. Mr. Teale repeated the

manipulation with much greater freedom, kneading the tumour in various directions. This was done at 1 p.m.

15th.—An hour and a half after the last manipulation, the tumour had entirely ceased to pulsate, and had become a solid mass.

26th.—The tumour having rapidly decreased in size, the patient left the hospital this day cured, having been able to walk about the ward for a few days.

Art. 142.—*Wound of Femoral Artery and Vein.* By Mr. Holthouse, Surgeon to the Westminster Hospital, &c.

(*British Med. Journal*, May 7, 1859.)

This case is interesting, as an example, and one almost free from doubt, of a wound implicating both the main vessels, but in which gangrene did not result. It is just within the bounds of possibility that the large venous stream which gushed out from close beside the wound in the artery might have proceeded from a large vein divided close to its entrance into the femoral; but this is highly improbable, since the vein does not usually receive any such branch in Hunter's canal; and the appearance and situation of exit of the stream of blood led Mr. Holthouse to the confident conclusion that the vessel implicated was really the trunk of the vein.

Case.—The history of the case is rather curious. On January 15th—that is, twelve days before the patient's admission—he was shaving a piece of wood, which he held between his knees, with a sharp chisel about an inch wide, when the tool slipped, and penetrated the inner side of his right thigh to a considerable depth. Free hæmorrhage from the wound, to the amount of three pints, the friends say, immediately followed, and the blood came away in a jet which was projected to several inches. It was stopped by pressure, and the man kept his bed the whole of that day; but the surgeon who had been sent for at the time of the accident ordered him to get up and walk about the following day, which he did, going himself to see his "doctor," and walking sometimes as much as a mile. Immediately after the hæmorrhage which followed the infliction of the wound had ceased, a hard swelling formed around the wound, which pulsated so distinctly that it could be seen through the bedclothes. His medical attendant attributed the swelling to "proud flesh," and ordered it to be poulticed and rubbed with sweet oil. Although the man suffered severe pain in the wound, and could get little sleep in consequence, there was no recurrence of bleeding till eleven days after the accident, when a full stream of arterial blood burst from the wound while he was washing himself. This was repressed, as before, by tight bandaging over and above the wound; and he went to bed, and kept quiet for the rest of the day. The following morning, about eight o'clock, the hæmorrhage broke out afresh, and was again stopped by tightening the bandages, which had not been removed from the limb. Immediately after this he was brought to the hospital, being exceedingly pale and weak from loss of blood; his pulse 150; skin cool. A large pulsating tumour was situated about the middle and on the inner side of the right thigh, and the whole limb was greatly œdematous, from the pressure which had been made by the bandage to restrain the bleeding. A tourniquet having been placed round the upper part of the thigh, the bandages were removed, in order to examine the swelling. In the centre of this there was a small wound, from which a little venous blood trickled; and, while

the patient was being questioned as to its history, a sudden gush of arterial blood took place, which indicated by its size that it came from the femoral artery. The tourniquet was immediately tightened, and preparations were made for securing the wounded vessel. This took place at 11.30 a.m., the patient being under the influence of chloroform. Mr. Holthouse commenced the operation by enlarging the original opening upwards and downwards to the extent of four or five inches. This exposed the sac of the false aneurism, which was filled with coagulated blood; and, when this was turned out, a large wound was discovered in the femoral artery, which lay at a great depth from the surface, on account of the œdematous state of the limb, induced by long-continued pressure. The arterial stream which issued from the wounded artery when the tourniquet was loosened, was accompanied by a very large venous one, which prevented the operation from being proceeded with till a ligature had been applied tightly below the knee. This effectually commanded the hæmorrhage from the vein; and a ligature was then passed around the artery below the wound, and another above it, which completely stopped all further bleeding from that vessel. A small artery on the side of the wound was then secured; and the wound itself was stuffed with pieces of sponge, in order to keep up pressure on the vein which had bled so freely. The edges of the incision were then brought together by strips of plaster, which completely encircled the limb; and a flannel roller was applied over them from the foot to above the wound; and a hot-water bottle to the foot, which, with the whole limb, had been quite cold from the time of the patient's admission, in consequence of the pressure to which it had been subjected. A small quantity of brandy-and-water was administered upon the completion of the operation, and shortly afterwards the following draught: ℞ Tincturæ Opii ℥xxv; Ætheris Chlorici ℥xv; Aquæ ℥iss. Eight p.m. Reaction had taken place in the limb, and the foot was now warmer than the left. The skin was hot; pulse 156.

28th.—He had no unfavorable symptoms; pulse 120. The right foot was still the warmer. ℞ Tincturæ Ferri Sesquichloridi ℥x; Aquæ ℥i. M. Fiat haust. ter die sumendus.

29th.—He vomited this morning, after taking the iron; but, in other respects, he was doing well. Pulse 106.

30th.—The wound was dressed this morning. It looked healthy; there was a free secretion of laudable pus. The sponges were removed, and the edges of the wound were brought together by long pieces of the water-strapping pretty tightly applied, the flannel bandage being replaced as before.

Feb. 1st.—The wound was looking very healthy. The ligature which was placed on the small artery came away. He was ordered to have some fowl for his dinner.

3rd.—The lower of the two ligatures placed around the femoral artery came away this morning; that above was still firm. The wound was looking as healthy as could be.

5th.—The ligature on the proximal end of the artery came away to-day (tenth day). The wound continued to look perfectly healthy; the man was gaining strength and colour, and ate two chops, and took a pint of porter daily.

9th.—Both feet were of equal temperature, but some œdema of the limb still remained below the wound. The flannel bandage was still applied from the toes to the groin. He complained of some numbness of the foot.

20th.—The wound was almost healed. Some numbness of the foot still remained, and he complained of occasional pain going up to the groin; but in

other respects he seemed perfectly well. He was walking about this day for the first time.

25th.—He was discharged at his own request, looking and feeling quite well; but he had a small sore on his right heel, caused by pressure while lying in bed.

ART. 143.—*On Inflammation of the Bursa under the Tendon of the Sartorius Muscle.* By ROBERT L. MACDONNELL, M.D., Surgeon to St. Patrick's Hospital, Montreal.

(*Montreal Medical Chronicle*, June, 1859.)

There is a form of bursal enlargement met with about the knee-joint, which Dr. Macdonnell would suppose to be of frequent occurrence, if he were to judge from his own experience, but which has not been noticed till recently by writers upon the affections of the bursæ. This is acute and chronic inflammation of the bursa, lying under the tendon of the Sartorius muscle, near its insertion into the head of the tibia.

The following cases will serve as examples of the acute and chronic forms of the disease:

CASE 1.—A strong, healthy young woman, unaccustomed to walking long distances, passed all day strolling about the Mountain of Montreal, in company with her friends, and returned to town, greatly fatigued, in the evening. About the middle of the night she awoke, suffering acute pain in the right knee, and at the upper and inner part of the head of the tibia. The next day the pain increased, and she was unable to extend the leg or to bear her weight upon it. Two days after, she was admitted, under Dr. Macdonnell's care, into the Montreal General Hospital, of which institution he was then one of the surgeons. On examination, a painful swelling was noticed at the inner side of the head of the tibia, about the size of a hen's egg; the skin covering it was tense and shining; the tumour advanced upwards to the inner edge of the patella; and, when pressure was made upon it, it became somewhat less, and could be pushed under the tendon of the sartorius. The form of the tumour was changed according as the leg was flexed, extended, or adducted, and the pain was greatly increased when contraction of the sartorius was made; the leg was slightly flexed. There was no swelling at either side of the patella, and the shape of the knee-joint itself was unchanged.

The usual antiphlogistic treatment was employed without any benefit. On the contrary, the tumour became larger, though less painful. He was engaged in pointing out to the students the peculiarities of the case, when his friend Dr. Peltier, physician to the Hôtel Dieu, entered the ward, from whom he borrowed a small trocar, such as are put up in French pocket-cases, with which he punctured the tumour, and drew off an egg-cup full of clear fluid. The wound was closed with plaster, a compress placed over the seat of the tumour, and a roller carried round the joint. She left the hospital a week after, quite well.

The above case occurred in the summer of 1848; and since then, he has met with similar cases. Being under the impression that he had first seen an example of this disease in the practice of Mr. Adams of Dublin, and not finding any allusion to it in his article on the "Abnormal Condition of the Knee-Joint," published in *Todd's Cyclopædia of Anatomy*, he wrote to that distinguished surgeon on the 13th November, 1857; mentioning, at the same time, that he

could find only one author who alluded to the matter, viz., Nélaton, in his "Clinical Surgery," published by Atlee in 1855, seven years after he had treated the foregoing case. Mr. Adams stated, in reply, that he had not met with the disease, although he had seen a similar affection on the outside of the knee-joint, and that a cast of the case was in the museum of the Richmond Surgical Hospital. He had also met with enlargement of the bursa in the popliteal space, and had delineated it, in his recent work on "Chronic Rheumatic Arthritis."

Case 2.—A strong young woman was admitted under his care into St. Patrick's Hospital, January 12th, 1859, labouring under a painful affection of the left knee of three months' duration. She stated that she received a severe blow upon the inner side of the knee about three months before, and that she had suffered severe pain in that situation ever since, and on admission, there was fixed pain at the inner edge of the head of the tibia, corresponding to the insertion of the sartorius muscle, most intense at the commencement of the spine of the tibia. It was greatly increased by walking or standing erect, and was relieved when the leg was semiflexed. Corresponding to the seat of the pain, there was a well-marked, flattened swelling, resembling a section of an orange; it was fluctuating, and admitted of alteration of shape according as pressure was modified. The fluid could not be displaced beyond the limits already pointed out. There was no alteration whatever in the shape of the knee-joint itself. The application of blisters, and rest in the recumbent posture, succeeded in dispersing the tumour.

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 144.—*Appearances of the yearly ripening of Ova in Women.* By Dr. MATTEI.

(*Gaz. des Hôpitaux*, No. 22, 1859; and *Medico-Chir. Review*, Oct., 1859.)

Dr. Mattei regards the theory of the monthly maturation of ova concurrently with menstruation as erroneous, and believes that for each ovary only one annual ripening takes place. The months of January, February, March, and April are especially favorable for this maturation. The appearances of this condition come on at times very gently, at others very painfully. The general appearances are, alterations of the voice, sleeplessness, at times neuralgias, prostration, vomiting, frequently palpitation, cough, hoarseness, without material change in the breasts. As local symptoms there are, sensation of weight or pain in the abdomen, from the sacrum to the thighs, and especially pains in that side of the pelvis on which the lymphatic glands are swollen and tender; there is also heat and excitement of the external genitals. The menstruation is disturbed; it is seldom rendered more profuse, most frequently more scanty, coming on earlier, and attended with nausea. At times leucorrhœa, diarrhœa, dysuria, sympathetic symptoms in the breasts; the excitation of the ovarian region causes pains, nausea, even hysterical cramps; hematocele, peritonitis, and phlegmon may occur. According to the individual, these symptoms may last for four, twelve, or twenty-eight days, and disappear altogether, or pass into symptoms of pregnancy, or false conception. The interval between the ripening of the ova in the two ovaries is variable. The minimum observed by the author was four days, the maximum five months. Dr. Mattei further says that this yearly ripening mostly ceases at the same epoch as the germination of plants and the rut of animals.

ART. 145.—*New tests for the Kiesteine of Pregnancy.* By Dr. J. BRAXTON HICKS, Assist.-Physician-Accoucheur to Guy's Hospital.

(*Lancet*, Sept. 17, 1859.)

The time consumed by the usual method of obtaining kiesteine, and the unpleasant odour arising from its decomposition, render it a desideratum to possess a test which shall hasten its appearance and increase the quantity deposited from the urine. Into the value of it as a sign of pregnancy, Dr. Hicks does not at present intend to enter; but as a readier means of ascertaining its existence will assist investigations on that point, he offers his experience on the action of rennet on urine containing the above-named substance. What the composition of this substance is, as it exists in newly-passed urine, has not been as yet ascertained. There can be scarcely any doubt that the action of the air alters it into a substance very similar to casein, if not identical with it, inasmuch as it is coagulable by rennet, and insoluble in cold acetic acid, and generally in hot. That the substance called by Dr. Stark "gravidine" is another substance seems probable, and may be that which is precipitated out of some urine of pregnancy by a small quantity of acetic acid, though it is generally re-dissolved in from six to twenty hours; or it may be the same substance in varying degrees of alteration. The readiness with which this change takes place, whatever it may be, varies very considerably in pregnant women, and that without any apparent cause. A few hours' exposure to or agitation with air is sufficient to deposit the altered substance; while in others, two days are required: and this is not altogether dependent on the period of pregnancy, for Dr. Hicks has found a person, only four months and a half advanced, yield copious deposit in three hours after passing; while another at the full term required within two or three days.

Now, as there is no amorphous deposit thrown down from urine previously clear, within two or three days, which is not easily dissolved by heat (lithates) or by dilute acetic acid (phosphates and carbonates), excepting from that of pregnant women, it is evidently not necessary to wait till the decomposition has gone on to form the white pellicle which ensues upon protracted exposure; but if a deposit takes place varying in colour according to that of the urine (but naturally white), unchanged by the above-named tests, then we may safely conclude that the urine contains kiesteine.

This deposit varies from copious troubling to that of small flakes falling to the bottom, and probably results from the natural acid of the urine, or the formation of lactic acid in it, coagulating the newly altered kiesteine; and the time at which the troubling takes place varies also, probably, with the rapidity with which the change by the air goes on and the condition of acidity.

If, then, we add rennet to urine of pregnancy, we shall find that in nearly every case the deposit above alluded to appears at an earlier date than if it is not employed: in some cases, within an hour (this is uncommon); in others (especially if the urine be recently passed), in from twelve to twenty-four hours. In the majority of instances, the

change produced by the above-named agent has been in advance of the usual method by about half the time, and the quantity of the deposit has been decidedly greater.

Now, the greasy-looking pellicle which has always been waited for as a sure sign of kiesteine, consists of a small quantity of amorphous matter (kiesteine); occasionally a few fat globules, but not constant; numerous crystals of the tripo-phosphate, amorphous carbonate, and phosphate of lime, which incrusts the numerous so-called vibriones, thereby preventing their peculiar movements till released by the addition of acetic or other acid. All these are produced by the process of decomposition, and form therefore but a crude test, being also somewhat imitated by the decomposition of albuminous and diabetic urine.

Rennet, Dr. Hicks finds, has no action on healthy, diabetic, albuminous, or phosphatic urine. A slight deposit sometimes takes place, looking something like mucus; but urine giving off but a slight precipitate should be held doubtful in respect of kiesteine.

If, after the deposit is well formed, we add to, say half an ounce of the turbid urine (taking the lower portions) a few drops of strong solution of ammonia, and boil for a minute or two, we shall find the deposit is formed into a semi-mucous mass, so that the urine becomes almost tremulous. When this occurs, it is, Dr. Hicks thinks, characteristic of kiesteine. It can be produced without boiling, but the change is slower and not so complete. If the deposit be scanty, the above appearance is not so well marked; but, by careful watching, it may be observed amongst the flakes which are formed.

This test for kiesteine can be employed equally well with or without the previous use of rennet. The quantity of phosphates thrown down by the ammonia may be known by adding gradually acetic acid, so as to slightly acidulate. What remains undissolved is the kiesteine.

In employing rennet the best method is to mix about two teaspoonfuls (as described below) with about three ounces of the urine, if it be recently passed; but if it has stood some time, and the kiesteine is about to be deposited, the author likes to pour it quietly in, so that it may fall to the bottom. The deposit is then clearly shown at the juncture of the two fluids.

Alkaline urine should be accurately neutralised by acetic acid, and should pus be present, it should be allowed to stand, and then be filtered. (However, the rennet semi-gelatinizes pus, so that it is not of very great consequence) This plan should be adopted in all cases where the urine is turbid, from phosphates, pus, mucus, or extraneous matter.

The chief advantages of the employment of rennet are—

1st. Saving of much time.
2d. Increase of the deposit.
3d. The deposit is nearly free from phosphates.
4th. It is nearly free from smell.

The rennet used is prepared in this way: Take the fourth stomach of a calf as soon as killed, and scour it well inside and out with salt, so as to remove the curd. Let it drain a few hours. Place it in a wide-mouthed jar, and sprinkle a handful of salt upon it. In a short time the juice will exude, and dissolve the salt. Take this and filter

through bibulous paper; place it in a bottle, and use as required. That left in the jar will continue to yield a fluid for some time; otherwise some salt and a small quantity of warm water should be poured over it, and allowed to stand a day. Then filter the juice. The stomach may also be filled with salt and sewn up, or it can be stretched on a skin to dry. In the latter cases pour warm water upon it, allowing it to stand some hours, adding salt to help to preserve it. The more concentrated the juice is the better.

Rennet, already salted, may be obtained of almost any butcher.

Art. 146.—*On the Sickness of Pregnancy.*
By Dr. Charles E. Bagot.

(*Dublin Medical Press*, Oct. 12, 1859.)

"In 1846," writes Dr. Bagot, "I had had under my care a woman labouring under that extreme form of sickness from pregnancy which placed life in the most imminent jeopardy. I had tried all the usual remedies suggested in such cases, and found them one after another to fail in producing any relief. Although there were no symptoms whatsoever which would make me suppose that any inflammation was either the proximate or remote cause of the sickness, I resolved to try the effects of mercury, and having had some experience of the powers of calomel in allaying other forms of vomiting, I fixed on the administration of this preparation, steadily persevering in its use until her gums showed appearances of salivation, which they did in a very short time. This treatment resulted in the best effects. Immediately that slight salivation took place, the vomiting, previously so persistent, at once ceased, food remained on the stomach, the patient rapidly recovered, and was in due time safely delivered of a full-grown infant.

"After a more than ordinary length of time, and about three years from my publication of her case, this woman again became pregnant, when she was once more seized with the same dangerous vomiting at the fourth month of gestation, and I was again obliged to resort to the calomel treatment before I could succeed in allaying the almost fatal form of sickness under which she was labouring. By the use of the same medicine she, however, was again brought through, but with this difference, comparing this present attack with the former one, that it was found necessary to prolong the salivation for some days before complete relief from her urgent symptoms was obtained, whereas, on the previous occasions, as I have mentioned, the vomiting subsided on the first appearance of mercurialization.

"I had a third opportunity of trying the calomel with the same patient, as during her next pregnancy, her life was again placed in imminent peril by a recurrence of the same urgent symptoms, the violence of the vomiting, and weakness produced by want of nourishment, exceeding, if possible, the state on the two previous occasions, at least such was the account which I received in the country, where I was at that time residing. A medical practitioner by whom she was attended, having heard of my success in producing relief by salivation, administered to her some medicine which had that effect, but

I am not aware of the preparation which he used, and only know that his treatment was of no avail, the symptoms continuing with unabated violence. At this juncture I was written to, when I recommended that slight salivation should be kept up by means of small doses of calomel, given three times daily, and that with each dose she should have a draught containing fifteen drops of chloroform. This treatment was adopted under the direction of a medical gentleman of my acquaintance, and was attended with almost magical effect; after the administration of a few doses the vomiting ceased, light nutriment lay upon the stomach, she gradually gained flesh, became restored to health and strength, and at the full period of nine months was safely confined.

"Since that time (1854) this woman has not become pregnant, for which fact her age will account.

"I hope those brief remarks will suffice to call attention to this important subject, and that no man in the profession will again resort to the induction of premature labour without at least giving a fair trial to the treatment I have recommended. The illness of Mrs. F— was of the very worst form; her symptoms were so urgent I despaired of her existence being prolonged; her prostration of strength was excessive; her emaciation extreme; her pulse a small thread; she had no tenderness in the epigastrium; neither had she pain in the region of the womb. nor the least uneasiness on pressure over that organ; she had no febrile nor inflammatory symptoms, and yet the most complete relief followed the exhibition of the mercurial pushed to slight salivation, and this success, I sincerely trust, may induce others to follow the example, and fairly test my plan, although my experience is but the result of three trials practised on the same patient."

ART. 147.—*Of the use of Chloroform in the diagnosis of Spurious Pregnancy.* By Dr. SIMPSON, Professor of Midwifery in the University of Cambridge.

(*Medical Times and Gazette*, Sept 10, 1859.)

The following interesting remarks are from a clinical lecture on spurious pregnancy.

"Chloroform," says Dr. Simpson, "will generally, in any case of doubt, solve the difficulty completely, if only given deeply enough. When the patient is fairly put to sleep with chloroform, the tense abdominal muscles become perfectly relaxed, and on pressing on the abdomen, you will find that the walls will give way before your hand, and sink backwards, till you can feel the spinal column quite distinctly, and you then find the uterus to be of normal size. The phenomena presented by that phantom tumefaction of the abdomen while the patient is being anæsthetised are very singular. When the patient lies down on her back, and the abdomen is uncovered, it is seen to be projecting, swollen, rounded, and defined, like the abdomen of a pregnant woman; but generally, as I have said, with an appearance of unusual constriction around the lower edge of the ribs. No change occurs during the first stage of the administration of the anæsthetic, and until the period of excitement has passed over, the swelling

continues, and the muscles remain rigid and tense as at first; but gradually, as that stage passes off, and the respiration offers to become sonorous, the muscles begin to be drawn in, and the abdomen slowly flattens, until it assumes its proper size, or even becomes depressed and relaxed, like the abdomen after delivery. So long as the patient remains in a deeply anæsthetic state, you can make the most complete and satisfactory examination of the state of the uterus, and, indeed, of all the abdominal organs; and you may have recourse to this expedient with perfect safety and success in doubtful cases of real pregnancy also. But when she comes out of her sleep again, in a case of spurious pregnancy, the muscles begin to arch up and to become tense as before, so that by the time the patient is fully awake the abdomen is as large and rounded as ever, and the necessary examination again becomes painful. For, as I have already hinted, the patient has sometimes in pseudocyesis a degree of tenderness in the abdomen that renders her very intolerant even of a slight amount of pressure. The patient having wakened up and found the apparent tumour still present, fails herself to be convinced of the fact that it had, for a time, been dispelled. But you may, perhaps, convince some of her friends of the absence of any real tumour, and their corroborative assertion may go far to bring her to a sound and proper belief afterwards. I had once a poor peasant's wife, from Berwickshire, with spurious pregnancy, who bothered all her friends, and kept them in a continued state of anxiety and trouble, because she was always going into labour, until she had arrived at a period which corresponded in her reckoning with the thirteenth month of utero-gestation. She was one of those persons whom it was utterly impossible to convince by any argument of the true nature of her affection; and her great confidence in the reality of her pregnancy had imposed on her friends, and led them for long to share in her kind of monomania,—for, after all, the mind is really in such a morbid state in some of these cases as to deserve the name of monomania. Having put her under the influence of chloroform, I called her sister into the room, and made her feel the spine through the collapsed abdominal walls, and succeeded thus in demonstrating to her entire satisfaction that there was no child in her sister's abdomen. But the patient waking up, and finding no change in her condition and form, might have remained unshaken in her belief, and, indeed, was still for stoutly affirming that she was pregnant, when her sister shut her up with 'Haud your tongue, woman! You've naething in your wame, for I felt your backbane myself with my ain hand.' I have no very satisfactory explanation to offer you of the nature of this very strange abdominal swelling, and of the peculiar phenomena observed in it, when the patient is in a state of anæsthesia. Some years ago I made a number of observations on some of our hospital patients, to try and solve the difficulty. Some medical friends who had been told of the remarkable effect of the chloroform, were quite certain that the swelling must have been due to the distension of the bowels with gas, which, they averred, must have escaped unobserved when the sphincter was relaxed during the deep sleep induced by the drug. But that this was not the proper explanation we easily proved by introducing

a tube into the rectum, and putting the free end of it under water, and then finding that no bubble of air escaped during the anæsthetic subsidence of the swelling, I believe that the phenomenon most probably depends on some affection of the diaphragm, which is thrown into a state of contraction, and pushes the bowels downwards into the abdominal cavity. I am the more convinced that this is the true explanation, from the fact that you can sometimes make the abdominal swelling disappear for a second or two, by getting the patient to take a deep inspiration, and then suddenly breathe out again. But whatever be the explanation, the value of anæsthesia as an adjuvant in aiding and establishing a correct diagnosis of such cases cannot be overrated."

ART. 148.—*On the relative advantages of Hospital and Home Obstetric Practice.* By Dr. ROBERT BARNES, Physician to the Royal Maternity Charity, &c.

(*Dublin Quarterly Journal of Medicine*, Aug., 1859.)

The following tables and remarks are from a paper on the Clinical History of the Eastern Division of the Royal Maternity Charity, during the year ending September 30th, 1858. The patients of this Charity, it is to be understood, are all attended at their own homes by midwives, acting under the superintendence of physicians and certain medical assistants. The eastern division of the institution, which is about two-thirds of the whole, is the largest obstetric charity in London. It would certainly seem that the experience of an institution of this kind, working over a wide district at the homes of the patients, must give a more accurate representation of the ordinary parturient history of the community than can be drawn from the records of lying-in hospitals, where almost all things that surround the patient are exceptional. The tables are these:

TABLE I.—*Illustrating the Proportion of Still-Births to Total Births.**

	Total Labours.	No. of Dead-born.	Proportion of Dead-born.	Dead, putrid.
Royal Maternity Charity, London, 1856, 1857-8	10,561	308	1 in 34	
Maternity and Dispensary, Edinburgh, 1858	883	62	1 in 14	
Lying-in Hospital, Dublin, 1757 to 1847	156,100	9291	1 in 17	
Ditto 1847 to 1854	13,748	968	1 in 14	487
Birmingham Lying-in Hospital, 1858 .	1,049	59	1 in 18	

* The figures relating to the Edinburgh Institution were supplied by Dr. Matthews Duncan; those from Birmingham by Dr. Elkington.

TABLE II.—*Showing Proportion of various Operations, &c., in Dublin Lying-in Hospital and Royal Maternity Charity.*

	Craniotomy.	Forceps.	Turning.	Placenta Prævia.
Dublin Hospital, 1847 to 1854	130, or 1 in 106	200, or 1 in 69	66, or 1 in 208	24, or 1 in 571
Royal Maternity Charity, Eastern Division, Dr. Barnes . .	4, or 1 in 600	6, or 1 in 445	7, or 1 in 316	9, or 1 in 268

TABLE III.—*Illustrating Rate of Mortality in Child-Birth, distinguishing Puerperal Fever, in Hospital and Home Practice.*

	Total Deliveries.	Total Deaths.	Rate of Mortality.	Deaths from Puerperal Fever.	Rate of Mortality from Puerperal Fever.
All London, 1858 . .	87734*	430	1 in 204	165	1 in 502
Royal Maternity Charity, Eastern Division, 1857, 1858, Dr. Barnes . .	2418	7	1 in 345	4	1 in 600
All Edinburgh, 1858 .	5186*	28	1 in 183	16	1 in 321
Hospital, Edinburgh .	277	3	1 in 92	Not specified	
Lying-in Hospital, Dublin, from 1847 to 1854 .	13748	163	1 in 84	70	1 in 197
Lying-in Hospitals, London, 1858	.....	11			

Commenting upon these tables, Dr. Barnes says:—

"In table I, I have brought together illustrations of the proportion of dead-born to live-born children. In the Royal Maternity Charity one child out of every thirty-four is still-born; in the Maternity and Dispensary at Edinburgh, one in fourteen; in the Birmingham Lying-in Hospital, including in and out patients, one in eighteen; in the Dublin Lying-in Hospital, during the first ninety years of the existence of this celebrated Institution, one in seventeen; and during the seven years, from 1847 to 1854, the proportion was one in fourteen.

"1. Applying these facts to the solution of the question of the unknown number of dead-born children in London, we find, taking the Royal Maternity experience, that since about three per cent. of the total births are dead-born, we must multiply the registered births

* Deduction from registered births of 1 per cent. made for twin births.

in London by 1·03, which would give 91,278, from which, if we deduct one per cent. for twin-births, the number of deliveries would be 90,365. This is still liable to the fallacy that an unknown number of living children escape registration.

"2. From this estimate it appears that 2658 still-births (no account taken of abortions) take place annually in London. Of these 2658 deliveries the public has no information; that is, we know nothing of the circumstances under which 2658 women brought forth; it is not known how many were unassisted by competent skill; it is not known how many of the children thus ignored perished from causes connected with the act of delivery; it must, indeed, remain a matter of conjecture whether this number does not include many infants who perished from neglect, or more criminal default, within a few hours of birth. The medical statistician is left to regret the loss of many facts that might prove of signal value as indications in preventive medicine; the statesman must contemplate with alarm an uncertain amount of social misfortune, of depravity, and of crime, that lies enveloped in mystery, and therefore beyond relief or restraint.

"I refrain from pursuing this speculation through its applications to Edinburgh and Dublin, or the kingdom at large. In Ireland there is, unfortunately, at present, no registration. I will merely refer to the great difference between the proportion of dead to live-born children observed in the Dublin Hospital and in London. The wide distance between one in thirty-four in London, and one in fourteen in Dublin, may raise a doubt as to the correctness of the London returns; of the correctness of the Dublin returns there can be none. But there is a remarkable circumstance, which the admirable perfection of the records of the Dublin Hospital supplies, that throws light upon the discrepancy. A record is kept of the children born dead and *putrid*. Now the proportion of putrid children alone is one in thirty, or greater than the total dead-born in London. There must, then, be causes in operation in Dublin which do not act in the practice of the Royal Maternity Charity. Another fact that deserves attention is, that there appears to be a relation between the proportion of dead-born children, and the proportion of obstetric operations and maternal mortality. This latter also is far higher in Dublin than in London.

"The conclusion indicated by the foregoing reflections, and others, that will suggest themselves is, that *an effective scheme of registration must embrace every delivery*. In the case of the fruit being still-born, it is desirable to specify, as well as can be done, the ascertained or probable cause of death. The only approach to a collection reliable upon this head, with which I am acquainted, was commenced by Dr. Collins, and continued under Dr. Shekleton, at the Dublin Lying-in Hospital. I have no hesitation in declaring my conviction that the extension of registration to still-births is imperatively required as a means of protection for infant and even maternal life. Of its importance as an element in the construction of medical statistical comparisons, every one accustomed to similar researches may judge. An objection, not without weight, lies in the difficulty of drawing a line between abortion and birth at a period when the fruit is viable. But I cannot now discuss objections or difficulties.

"Returning to obstetrics proper, I refer to Table II., in which the proportions of various operations in the Dublin Hospital and in the Royal Maternity Charity are stated. During the seven years, from 1847 to 1854, in Dublin, craniotomy was performed once in every 106 labours; in London, once in 600 labours; the forceps were used in Dublin once in 269 cases; in London, once in 400; and turning was performed in Dublin once in 208 cases; in London, once in 345. Some reflections, bearing upon these differences, are contained in the observations that follow upon the next table.

"The table illustrating the rate of mortality in child-birth, distinguishing deaths from puerperal fever, must be read with some reservation. Inquiries made with reference to this report increase the distrust which a peculiar experience had already raised in my mind as to the trust-worthiness of the public statistical returns. In London, owing to the vastness of the community of which the medical practitioner forms an item, instances of individual mishap in practice reflect less severely upon him than they are apt to do in more limited circles. The mortality returns of London are, moreover, subjected weekly to the scrutiny of the medical officers of health. Coroners' inquests are also freely held in cases of death, the cause of which is not satisfactorily attested. The Registrar-General publishes a weekly summary of the London mortality returns, which is scanned with interest by many persons. These circumstances concur to invest the London mortality returns with an authority which I fear is not merited generally. The fallacy of large generalizations, unchecked by individual experience, may be seen from the following example:—It is stated in the Registrar-General's Report for 1856, that the mortality in child-birth in England and Wales, in 1847, was one in 167, and that it had fallen to one in 227 in 1856. Now, having applied to Dr. Elkington for the puerperal statistics of Birmingham, I learn that the Registrar of that town says that "no one ever specifies the deaths in child-bed or from puerperal fever." May it not be that in 1847 there was less repugnance in giving correct certificates than in 1856? Certain it is, that here, as in every other medical inquiry, we must fall back upon individual observation.

"The facts tabulated cannot fail to provoke the important inquiry as to the relative advantages of hospital and home obstetric institutions as to mortality in child-birth. When we observe that in hospital practice one woman in ninety-two dies in child-bed in Edinburgh, one in eighty-four in Dublin, whilst in the Royal Maternity Charity the deaths were only one in 345, the causes of this difference must appear deserving of investigation. I at once discard all idea of difference of skill. The indications for operations are much the same in London and Dublin; at least they are so for me. The following causes appear to be the most efficient:—

"1. Puerperal fever is undoubtedly more destructive wherever lying-in women are congregated. By congregation, the fomites given off acquire concentration, and probably tend to that specific fermentation which produces the poison so fatal when absorbed into the circulation. In addition to the greater risk of aërial infection, there is the increased danger in hospitals of conveying poison by touch, and by articles of

clothing. The state of insultation of every puerpera in her own dwelling guards her from the most active sources of infection. The difference in London is striking. Whilst the 2418 home-patients gave only seven deaths from all causes, no less than eleven women died in the hospltals, most of them probably from fever, although the total deliveries were far less in number.

"2. The late period of the labour, and comparatively helpless condition of the patients when brought into hospital, contributes largely to the mortality. In home practice, we have the advantage of watching the patient from the commencement of labour; her condition is not imperilled by being transported, at a critical period, to a distance. The records of the Dublin Hospital show that many women are brought in moribund, and many others too late for the application of the most effective means of treatment.

"3. The deserved reputation of the Dublin Lying-in Hospital attracts many of the most formidable obstetric cases, so that the practice of such an institution includes a higher proportion of dangerous cases than would occur in the general population. I must observe, that, to a certain extent, the Royal Maternity Charity is entitled to the like consideration. The knowledge that the physician will be called in, in the event of difficulty, induces women who have previously had bad labours to apply for tickets. This circumstance, then, I do not think will account for the far greater proportion of operation cases in the Dublin Hospital. Thus, during Dr. Shekleton's seven years' mastership, one woman in forty-two was delivered by forceps or craniotomy, whilst, in my public practice, only one woman in 420 was thus delivered. This excess of ten to one must have other causes concurring. Is it that distortion is more common in Ireland? This and other questions suggested, increase the regret that a system of registration, like that in operation in England, is not yet established in Ireland. We cannot know how far the experience of the Dublin Hospital is exceptional or typical of the parturient history of Ireland, until we have a general statistical return.

"4. I may be excused for adverting to a doubt which has been often expressed to me, whether the records of the Royal Maternity Charity are so accurately kept as to deserve reliance. I believe the system followed is well calculated to insure completeness. Every month each midwife presents her case-book to the secretary; in this, entry is made of the name, residence, date of delivery, nature of presentation, fate of mother and child of every case attended by her, and also of every case in which the assistance of the physician has been called in. She is bound to visit every patient at least three times after delivery, and to enter the dates of her visits. In my division, the midwives' reports are checked by my own case-book, and by returns made to me by my assistants. It must further be remembered, that any midwife neglecting to call assistance in a serious case, runs the imminent—almost certain—risk of a coroner's inquest; and that the Registration system would surely bring to light any case of puerperal death. As far as they go, I believe no serious errors exist in the statistics I have given. It should be mentioned, that the Royal Maternity Charity gives relief to married women only.

"The experience of the Dublin Lying-in Hospital, where it is certain that every important circumstance is faithfully recorded, is therefore entitled to a degree of confidence to which no public vital statistics can lay claim.

"These reflections again lead me to the conclusion that no thoroughly reliable public vital statistics will ever be collected until it becomes imperative upon every person assisting at a birth, whether the fruit be living or dead, to see that the birth is registered.

"I am not competent to determine how far the system of home delivery is capable of being extended in Dublin. It is possible that any curtailment of the hospital succour would be attended by an increase of suffering greater than that which might be abrogated by succour at the homes of the poor. But it is impossible to read the histories of many of the cases brought to hospital, and not to perceive that lives have been frequently imperilled and lost, because the labours were not concluded where they had begun. In England, I believe, the extension of hospital obstetric practice is, on every ground, to be deprecated. Independently of the great mortality of lying-in hospitals, there are motives of the highest moral, social, and even national importance, that should induce us to resolutely withstand any approach to the system in operation in Continental cities."

Art. 149.—*Retrocession of Labour.* By Dr. Charien.

(*American Quarterly Journal of Med.*, July, 1859.)

Dr. Charien directs attention to the fact that, at any period of pregnancy, but particularly during the latter months, labour may commence and proceed regularly, so far as that the os uteri is opened up so considerably as to put the projecting bag of membranes on the stretch, and yet not only does complete rest recur, but the retrocession is so complete, that the os uteri closes again till some weeks after, when the labour begins afresh, and proceeds uninterruptedly to its close. In evidence of this, he cites four cases: The first occurred in the Obstetrical Clinique at Paris. A woman eight months pregnant, was seized with regular pains; the os uteri opened to the size of a five-franc piece and was soft; towards evening the water came away; during the night the pains continued regularly, but at 4 a.m. ceased entirely; the os uteri gradually closed, and by the following evening was quite shut. Twenty-one days after, the labour set in anew, and proceeded regularly to its termination. In the second case, the birth took place thirty-two days, in the third thirty-five days, and in the fourth twenty-two days, after the first occurrence of labour.

Professor Streng relates a remarkable instance of this retrogression of labour in the case of a woman brought to his clinique, with true labour pains, the os uteri dilated to about the size of a groschen, with distinct tension of the projecting bag of membranes, and considerable hæmorrhage from a lateral insertion of the placenta; to subdue this, injections of cold water, with the subsequent addition of muriate of iron, were successfully employed, and the patient strengthened by cordials; but the pains then ceased entirely, the os uteri closed, and

the birth did not take place till eight days after, when it occurred naturally. Such observations encourage the attempts to suspend premature labour.

Art. 150.—*Relative frequency of various Presentations of the Fœtus.* By Dr. William C. Rogers.

(*Amer. Med. Monthly*, May, 1859.)

Dr. Rogers tells us that he gathered the following figures from the standard and periodical literature of the profession and from his professional friends and correspondents:

Whole number of presentations	88,342
Head, (including "face to pubis," &c.)	85,210
Breech	1754
Feet and knees	445
Funis, (the accompanying presentation not given)	219
Arm	83
,, and head	38
,, ,, and funis	9
Head and funis	57
Placenta	25
Face	299
Shoulder	69
Transverse	120
Sacrum	1
Back	6
Belly	6
Forehead	1

Art. 151.—*Case of Twins with Single Placenta.* By Dr. J. A. Grant, Physician to General-Protestant Hospital, Ottawa, C.W.

(*Montreal Monthly Journal*, March, 1859.)

Case.—January 25th 1859, I was called upon about 2 a.m., to visit Mrs. B—, æt. 24 years, presenting all the external characteristics of good health and in labour with her first child. Shortly after arrival I was informed that an old midwife had been in attendance for upwards of fifteen hours. Upon examination I found the os uteri fully dilated, membranes ruptured, head advanced to the inferior strait of pelvis and in the first position. According to the ascertained history of the case, strong bearing down pains had been existing for several hours and without any visible alteration. After remaining about four hours by the bed-side, during which period the pains still continued with no ordinary degree of severity, I was obliged to assist nature and deliver with the forceps, which was accomplished without much difficulty, the bowels being previously regulated and the contents of the bladder removed. The smallness of the child, non-reduction of abdominal enlargement and the detection of fresh membranes, established the existence of twin pregnancy. Finding difficulty in the removal of placenta I resolved upon leaving it until the birth of second child. After an interval of rest of about fifteen minutes duration, the pains returned and the membranes protruding were ruptured.

The head readily descended to the outlet beyond which, without instrumental interference, there was not much prospect of delivery. An interval of half an hour from the birth of first child, having elapsed, the forceps were again applied and the second child removed, thus terminating the delivery of both, alive and well.

More than ordinary rigidity of the perineum, associated with considerable diminution of the capacity of pelvis from tumefaction of its linings, induced by too frequent examination; appeared to be the most apparent causes of detention, towards the exit of the child's head. The placenta which presented the following peculiarities was removed with ease. Shape, that of a perfect oval, nine inches in length and about an inch in thickness. *Outer or uterine surface*, slightly convex, presenting the usual irregular lobes with intervening sulci. The laminated albuminous tissue, (*decidua serotina*) which covers over these parts being removed, caused this surface to present no striking peculiarities, as to these sulci being alike throughout its entirety. Inner or fœtal surface slightly concave and possessing its proper glistening appearance, being covered by the chorion and amnion, these membrances uniting midway between the insertion of either cord. The membranes at their junction were so perfectly united, as not to admit of separation without being lacerated. The cords presented no visible peculiarities, either as to their anatomical composition or placental insertion, excepting that they were equi-distant from each other and from the circumference, longitudinally.

ART. 152.—*A simple instrument for Inflating the Lungs of Still-born Infants.* By Dr. J. G. WILSON, Physician-Accoucheur to the Glasgow Lying-in Hospital, &c.

(*Pamphlet*, Glasgow, 1859.)

This instrument essentially consists of a vulcanised india-rubber ball, about the size of an orange, to which is attached a German-silver tube, about six inches long, and gently curved towards its free extremity. The tube is closed at the extreme end, but has two openings or eyes, like a female catheter, a short distance from the point. On compressing the ball, the contained air rushes along the tube and through the openings above mentioned, and on removing the pressure the ball rapidly expands, and becomes instantly refilled with air, which may again be evacuated as before. On introducing the tube into the larynx, and acting in this manner, it is obvious that, for the most part, the same air would be used over and over again, which would be a manifest disadvantage and a decided objection. This, however, may be easily remedied, by making another opening in the tube, about an inch from its attachment to the ball, for the free ingress of fresh, cool, dry air. During the compression of the ball, the left thumb will easily cover the opening, which must, however, be removed to admit the entrance of pure air during the subsequent expansion of the ball. This opening being somewhat larger than the other two, and being much nearer the ball, readily permits the entrance of fresh air. The instrument can be readily introduced in the following manner: After throwing back the child's head a little, pass the left forefinger over upon the root of the tongue, into the rima glottidis, then with the instrument in the right hand, slide the tube along the surface of the

finger (which at once depresses the tongue and serves as a guide), and on reaching the rima, insert the tube at the moment you withdraw the finger. If this plan of operating be attended to, there is little fear of introducing the tube into the pharynx instead of into the larynx. It is not so necessary, as when other modes of inflation are used, to push back or depress the larynx in order to prevent the transmission of the air through the œsophagus. The insufflation of the lungs must be gently and slowly performed, so as to simulate as nearly as possible the normal respiratory process. After each inflation, the chest must be slightly compressed, in order to facilitate the expulsion of air from the lungs. The inflation of the lungs, alternated with pressure on the chest, should be steadily persevered in until respiration is regularly established, and ought never to be relinquished as hopeless whilst the least fluttering or quivering motion over the cardiac region is perceptible.

ART. 153.—*Extra-uterine Pregnancy, in which the Fœtus made its way into the Urinary Bladder.* By Dr. C. PETERSEN, of Ringkjobing.

(*Bibilothek for Læger ;* and *Dublin Med. Press,* Aug. 10, 1859.)

This case was brought before the Royal Medical Society of Stockholm, by Professor Levy. The translator is Dr. W. D. Moore. Dr. Levy prefaces the case by a reference to similar cases, and remarks that *vesical pregnancy*—as it is called by many systematic writers—can of course in the present day be understood only as a form of extra-uterine pregnancy, in which, in consequence first of an adhesive, and subsequently of an ulcerative inflammatory process, a close adhesion, and afterwards a direct communication, are produced between the extra-uterine sac and the urinary bladder.

CASE.—Mad. H——, æt. 54, of a slender frame of body and rather delicate health, had until her 36th year been tolerably strong, and had given birth to three children. In her 37th year she became for the fourth time pregnant, the catamenia were arrested, but when she was between the second and third month, she got suddenly, without being able to account for it, a violent attack of hæmorrhage from the genitals, and thought she had aborted, especially as she felt pains resembling those of labour. The hæmorrhage was particularly difficult to check; it returned in a minor degree almost daily, chiefly in the afternoon, and weakened her much. No medical advice was sought. At the end of a month the hæmorrhage entirely stopped, but the menses did not return, she became larger and larger, her breasts were highly developed, and when half the ordinary period of pregnancy had elapsed, reckoning from the time she first considered herself *enceinte*, she thought she felt movements, which subsequently often returned. Her health was, on the whole, very good, and she did not feel the least difference between her then state and her earlier pregnancies; no abnormity could be discovered in the abdomen, the latter being uniformly and regularly distended, without any tenderness, her breasts contained milk, and the only annoyance she experienced was caused by considerable œdema of the feet. When the time arrived at which, according to her computation, she ought to have been confined, she suddenly felt a movement in the abdomen, as if the fœtus turned, and she got a violent rigor,

which was repeated two or three times, and afterwards ceased to recur. She considered that the child was dead. A couple of days after, sudden and severe pains set in, which, however, soon ceased, and were followed by violent hæmorrhage, during which the pains returned in a slight degree, though the labour made no progress, and finally stopped altogether. The midwife said she felt something of the shape and size of a child's head, though she did not think it was so; but what she thought, or rather said she thought, the patient could not state. Neither on this occasion was any physician called in. The patient in vain expected that the throes would return: they were not felt again, but in their stead considerable pains set in in the lowest part of the abdomen, particularly in the left side, where she felt a large globular tumour, which soon transferred itself, together with the pains, to the right side, which it again forsook to occupy the middle, directly over the symphysis pubis, where it became stationary. Notwithstanding all this, the woman's health was very tolerable, the pains gradually diminished, although the tumour remained unaltered, her strength improved, and in about a month she was so well that she was able to get up and attend to her house work; the only inconvenience she felt was in stooping, but even this inconvenience was after a time much lessened; there was no impediment to the action of the bowels or bladder. Some months subsequently she was even able to undertake a considerable journey, about which she consulted a physician, who comforted her with the idea that she would in time recover, and that the tumour would disappear. In this hope the patient made herself easy, and fifteen years now passed away, (until the spring of 1854), during which she was very well. She attended to her daily occupations, menstruation was restored after the lapse of a year, and continued regular, until it stopped at the usual period for the change of life. The abdomen remained prominent for about five years, but afterwards gradually collapsed, the tumour over the symphysis became by degrees smaller and harder, the appetite and strength were good, the action of the bowels was a little torpid, the urine was voided without difficulty, though occasionally it was passed more frequently in the day than it had formerly been, and the œdema of the legs disappeared.

Such is the report of the patient's earlier condition. In May, 1854, she fell ill; she felt much oppressed, had a sensation of weight in the pit of the stomach, headache, her bowels were torpid and acted with difficulty, her appetite was bad; nevertheless, these symptoms soon disappeared simultaneously with the occurrence of pains in the pubic region. The latter she described as particularly violent, rending and cutting, as if the abdomen were being torn asunder; the remissions were very short, and the pains were accompanied with efforts to pass water, during which the pains themselves were increased. The urine presented no abnormity, either in quantity, appearance, or smell. A physician who was called in ordered some drops, and also the inunction of powerful ointments over the symphysis pubis, which remedies were used without any apparent benefit; but by degrees the patient became so accustomed to bear the pains, which had, perhaps, also somewhat diminished, that she could sit and get up several times in the day. Towards Christmas it happened that she was better than she had been for a long time, but this was only of short duration.

At the end of December she was suddenly surprised to observe a change in her urine. It was now passed more frequently, in small quantities, but without any particular increase of the pains; its appearance was turbid and milky, it was thicker, had a nauseous, penetrating odour, and on standing deposited a dense precipitate, resembling mucus. The patient's general health was scarcely affected, except that she was obliged to lie more in bed. By degrees

the urine changed its appearance, it seemed now to resemble matter, became thicker, produced more straining, and during such straining she observed, for the first time, that something of an angular shape was firmly fixed in the outer opening of the urethra. Without much difficulty she got it out, and immediately recognised it to be a spicula of bone. From this moment commenced the patient's peculiar sufferings, which gradually increased until her death; her existence was henceforward a series of the most horrible tortures, such as certainly but few human beings have felt the equal of, and assuredly only few physicians have witnessed, and my lot was aggravated by the feeling how helpless art was in such a case. In April, 1855, I saw the patient for the first time, up to which period two or three pieces of bone had been passed. She was very thin and pale, with a hectic flush on her cheeks, but still was lively in manner and address, and without the least effort she told me the whole history of her case with great fulness and many repetitions: indeed she occasionally even intermingled joking remarks with her description. Her appetite was unimpaired, particularly for solid food; the bowels were torpid, and she was obliged from time to time to aid them with medicine; the abdomen was much collapsed, and was tender to the touch, especially over the symphysis pubis, where a hard tumour was distinctly felt; but the considerable amount of tenderness prevented me from examining its size, form, and mobility as accurately as might be wished. As vaginal exploration also was extremely painful, neither did it lead to more information about the tumour or its relations to the other pelvic organs; and catheterization or exploration per anum the patient would not permit. With so imperfect an examination, it was not possible to form a more definite diagnosis than that there was an extra-uterine fœtus, which was now making its way outwards; but where the fœtus lay continued doubtful. There could be no hesitation whatever as to the unfavorable nature of the prognosis; but still I did not expect that the patient should lie an entire year before death would terminate her sufferings. I prescribed narcotics, both internally during the more severe paroxysms, and externally as fomentations to the genitals, and a camphor emulsion; and from that time I did not see the patient until I was called on the 1st of February, 1856, to her daughter in this town, and to my great surprise found that the mother had come here to place herself under my care. In a dreadful snowstorm she had travelled on an open vehicle seven miles,* in blankets, to be sure, but the desire to pass water constantly obliged her to uncover herself. Nevertheless, the next few days she felt unusually well. She now told me that shortly after I had been with her, she had observed a discharge of blood from the bowel, which had, however, soon stopped, and did not return. She had herself suspected that something had given way internally, and it was clear to me that an opening had formed between the rectum and the tumour, although the patient had never remarked that anything had been passed by that way, notwithstanding that up to that period about fifteen larger and several smaller portions of bone had been voided, all of which she thought had passed through the urethra. In other respects her state had been about the same as when I had before seen her. From the month of February I was almost daily witness of her sufferings, which gradually increased. A few days after her arrival she began to perceive the existence of the rectal fistula; it produced forcing both before and behind, at one time simultaneously, on other occasions at different times; when she thought she wanted to urinate, a few drops would come with fearful suffering, while a quantity of mucus would be squeezed out *per anum*, and when she felt a desire to go to stool, it appeared as if the passage was obstructed, and mucus then often passed from the

* Rather more than thirty-two English miles.—TRANSLATOR.

urethra. The urine was scanty, had a penetrating fœtid odour, was purulent, and filled with a mass of small bodies, which were found to be disintegrated bony substance. She was constantly obliged to use aperients, at first of a milder, and afterwards of a more powerful nature, for she ate much, and with appetite. When the slime, as she called it, passed from her, she felt tolerably well, but when the discharge was arrested for a day she got headache, cardiac oppression, and nausea. She was usually cheerful, and bore her sufferings with singular patience, and helped herself almost to the period of her death. Portions of bone of various sizes passed from her nearly every day (I was once obliged to remove a large piece from the urethra, where it had become impacted), and she thought herself fortunate when she did not require to have the basin more than ten times in the twenty-four hours. Latterly she had no rest by day or night, the desire was incessant, and she often required the basin five or six times in the hour. On one or two occasions the pain drove her out of bed, and she was found crouched in a corner of the room. She endeavoured to lie on a basin made for the purpose, but it was too hard, and latterly she passed everything under her in the bed. Completely worn out with torture and want of sleep, she died on the morning of the 29th of May.

As she was an intelligent and educated woman, and had herself stated that she had no objection to allow her body to be examined, as she considered her disease to be very rare; and, as her relatives gave permission, which is very unusual in this part of the country, my colleague, Dr. Bticher, and I, performed the post-mortem examination at two o'clock on the 30th.

We opened only the abdomen with an oval incision. There was no trace of peritonitis. On taking away the intestines, we came immediately upon a hard tumour, covered with a serous membrane, uneven to the touch, lying firmly on the vertebral column, and closely adherent to the rectum; it was as large as the head of a child, lay immediately behind the symphysis pubis, and its contents were evidently pieces of bone of various sizes. Over its lower part ran a few filaments, which afterwards appeared to be the right Fallopian tube; the uterus, which lay pushed to the left, was of about the normal size. We removed with great care the whole tumour, together with the uterus and the parts belonging to it, and a large portion of the rectum both above and below the fistula, which is sent herewith for further examination."

The more accurate examination of the tumour so carefully taken out, with the soft parts belonging to it, was, through the kindness of the operators, entrusted to me, and the result of the investigation, in which I was assisted by Candidate Krabbe, was as follows:

The extra-uterine sac, in which the principal portion of the bare fœtal bones were found, lay at the right side between the uterus and the rectum. It had anteriorly a large, tolerably smooth-edged, and, as it were, cicatrized opening into the upper part of the posterior wall of the bladder, and posteriorly a much smaller, roundish, uneven, and ulcerated opening into the upper part of the anterior wall of the rectum; both the urinary bladder and the rectum were, at a little distance from the openings, firmly adherent to the sac. A long, fissure-like opening, which was found between the upper part of the bladder and the uterus, had unmistakeably been made in performing the dissection. The urinary bladder itself, which we opened by a longitudinal incision from the not particularly distended urethra, appeared to be quite filled with bones of various sizes, chiefly belonging to the lower extremities, although there were also several derived from the cranium and the trunk; all the parts of the long bones, which lay down in the bladder, were strongly incrusted. The walls of the bladder were everywhere much thickened, its mucous membrane was very uneven, turgid, of a greyish colour, and was almost throughout

studded with a granular calcareous deposition. The ureters were normal, except that the right lay curved along the posterior wall of the sac. The uterus, but little larger than usual, was, with the upper part of the vagina, pressed slightly over towards the left side. The right Fallopian tube was considerably lengthened, and its ligament ran in a curve round and behind the sac nearly to the rectum, where it was seen to terminate in a cul-de-sac, inseparably connected to the sac, and but little distended. The right ovary was recognised in an atrophied state in the wall of the sac. The left tube was found to terminate in a closed dilatation, like an oblong bladder, capable of being inflated; it was attached to the ovary on the same side, and was somewhat injured in the preparation; a single fimbria, with an adherent little serous sac, was seen in the neighbourhood, separated from it.

Art. 154.—*Exomphalos, in which the Gravid Uterus formed the hernial mass.* By Dr. Murray.

(*Proc. of the Obstetr. Society of London*, April 6, 1859.)

Case.—This case, which Dr. Murray believes to be the first on record, possesses features of great interest and importance. The patient was a woman, æt. 30, the mother of three children, and had been from infancy affected with a small umbilical hernia, which had always been easily reduced. When in the eighth month of gestation she found one morning in rising suddenly from the recumbent position, that a large tumour had forced itself through the navel. This protrusion proved to be nothing less than two thirds of the impregnated uterus, the fœtus being distinctly recognised by palpitation. There was no rupture of the linea alba. Reduction was at once effected by means of gentle and careful manipulation, and the organ was happily kept *in situ* until the end of gestation, when a live female child was born. Mr. Murray quotes two or three cases from Boivin and Burns, which were somewhat analogous, but differed from the present case, inasmuch as the central tendinous cord had in them always yielded or divided; and he concludes by observing that the fact of the uterus being subjected to some amount of handling at this late period of gestation without producing labour, was interesting.

Art. 155.—*On the Hydatidiform or Vesicular Mole.* By Dr. Grailly Hewitt, Physician to the British Lying-in-Hospital.

(*Lancet*, Oct. 15, 1859.)

Cruveilhier was the first to demonstrate conclusively the non-hydatid character of those bodies discharged from the uterus in cases of so-called hydatid pregnancy, and this view of the case has been established by many observations subsequently made. Many essential points in reference to the nature and mode of origin of the hydatidiform or vesicular mole remain, however, still *sub judice*. In the present paper it is attempted to reduce the series of facts already on record into something like a system, and to offer a solution of certain questions not yet satisfactorily or clearly answered.

The author describes the particulars of a case in which a specimen of the hydatidiform mole was expelled from the uterus seven months after the birth of a first child, and during the process of

lactation. The patient did not suspect her pregnant condition, but for about six weeks the milk had increased in quantity, and fulness of the lower part of the abdomen and constipation had been noticed. The ovum, expelled entire, was apparently about two months old, and, on examination, offered a most perfect and interesting specimen of commencing hydatidiform degeneration of the ovum; the circumstance that the whole came away together afforded an opportunity of examining the parts as they had lain in the uterine cavity: the decidua uterina only being very slightly torn. On cutting vertically through the whole mass, the following appearances were met with: The amnionic cavity was empty; no embryo discoverable; the chorion and amnion membranes were adherent; about half of the chorion villi (the whole of those corresponding with the decidua serotina) presented the hydatidiform change; the remainder were covered by the decidua reflexa, shrivelled and small. The chorion villi proceeded from the chorion membrane, in their passage towards the decidua serotina becoming enlarged at intervals into rounded bladder-like bodies, one sixteenth to one sixth of an inch in diameter. Microscopic examination showed these vesicular bodies to possess the same structure as that of normal chorion villi, but the cells on the surface were wider apart, and the villi distended by a serous fluid, giving rise to the enlargements. The appearances observed did not differ materially from those described by Cruveilhier, Mettenheimer, Gierse, Wedl, and others.

The point respecting which opinions have been divided is—What is the nature and cause of the change in the chorion villi, which results in the production of these hydatidiform bodies? Mettenheimer, followed by Paget, declares them to be cysts, while Gierse considers that the change consists in hypertrophy of the natural structures of the chorion villi with secondary œdema. The "cyst" view the author dissents from altogether, and considers it positively disproved by observation of the specimen and the drawings of the same produced, and by comparison of the altered villi with normal villi at about the same period of development. From this it would appear that in the normal villi and in the altered ones we have precisely the same structures; it is not, then, necessary to have recourse to a cyst theory to account for the appearances. The cells on the surface of the villi are seen alike in the two cases; the vesicular enlargements evidently do not originate in them, and Gierse's opinion as to the essential anatomical character of the change is far nearer the truth. In fact, in the hydatidiform mole, we have not a new formation, but simply an alteration and degeneration of previously existing structures.

The next point is—What are the circumstances which determine this pathological alteration? On this subject the author differs materially from previous observers. Universally the transformation has been supposed to be the starting-point of the affection; that the disease of the chorion was the cause; the death of the embryo the effect. On the contrary, Dr. Hewitt contends that the death of the embryo occurs first, the chorionic transformation subsequently. The hydatidiform mole results from a degeneration of structures arrested in their development. Death of the embryo involves arrest of chorionic

development, but not necessarily cessation of vitality in the chorion villi; these may continue to grow, and this peculiar growth, for a persistence of which it is necessary only that the decidua be not separated from the uterus, will then result in the formation of the hydatidiform mole. After attaining a certain degree of development, the chorion villi do not appear to be capable of undergoing the change in question; the conditions necessary for that change are not present, and if the fœtus dies, no hydatidiform mole can be produced. The middle or end of the third month is probably the limit within which the change can originate.

With respect to the embryo, in most cases of hydatidiform change no trace of it is detected; when found, it is always very small. The evidence on this point, then, shows that the embryo perishes at a period so early as to leave no traces behind it, or that it does not survive a period roughly to be fixed at the end of the second month. We find, then, that all known facts are quite in harmony with the theory now offered as to the cause and nature of the hydatidiform transformation.

Some remarks are then made as to the cause of the death of the embryo in such cases. The author considers that, in the case of the patient above described, and in cases like it, it was very probable that the death was due to long-sustained but slow contraction of the uterus, produced by the irritation of lactation. Such contraction would diminish the nutrition of the villi, and in the end cause the death of the embryo. As confirmatory of this opinion as to the influence of lactation in producing abortion, some observations published by Dr. Barnes are mentioned. Dr. Barnes found that, in a number of cases of abortion of non-special character, into the particulars of which he had inquired, abortion occurred in 17 per cent. of cases of conception during lactation, and in only 10 per cent. of other cases. On this subsidiary branch of the inquiry, however, only speculative opinions were put forward.

As to the interesting question of the possibility of a portion of retained placenta taking on the hydatidiform change, the following opinion is offered:—The placenta of a mature fœtus cannot be so changed, but appearances giving rise to an erroneous conclusion on this point might arise—1st, in cases of double conception, one of the ova perishing at an early period, and the degenerated chorion villi remaining in the uterus after the normal birth; and, 2dly, in the perhaps possible case of a portion of the chorion villi having changed, from accidental separation from the embryo, the remainder growing normally.

Lastly, the question—"Can true hydatids be expelled from the uterus?"—is considered. The author is inclined to admit the possibility of this occurrence. When so expelled, the true hydatids arise, doubtless, in the uterine wall, and subsequently burst into the cavity of the uterus. A very simple examination would be sufficient to distinguish between such bodies and the hydatidiform cysts resulting from chorionic change. The fact, that in true hydatids we find cysts enclosed one within the other, and in the other case round or oval bodies attached one to another like beads, would

be alone sufficient to prevent the possibility of a mistake on this point.

The several points referred to in the paper are illustrated by drawings and preparations.

ART. 156.—*On the treatment of Urethritis in Women by Urethral Compression.* By M. THIRIAUX.

(*Presse Méd. Belge*, No. 50, 1858; and *Medical Times and Gazette*, May, 1859.)

M. Thiriaux observes that inflammation of the mucous membrane of the urethra is the most frequent affection that attacks the genito-urinary organs in women. It is an error to suppose that vaginitis is oftener met with, for an exact statistical account of the numerous cases observed in M. Thiry's wards at the St. Pierre Hospital, Brussels, proves that the women attacked with urethritis far exceed those suffering from vaginitis. This difference is especially observed among women who have had several children, and those who have committed sexual excesses. This greater relative disposition of the urethral mucous membrane to become inflamed depends upon the vaginal membrane having the sensibility of its mucous membrane gradually blunted by the repetition of stimulation, so that at last simple irritating causes cease to affect it, and sometimes even virulent contagious causes, under certain circumstances, are inoperative. It may depend also in part upon the greater care with which cleanliness of this part is observed. Every one is aware how obstinate urethritis frequently proves in women; and the persistence of the inflammation may give rise to various alterations, the most frequent of which are, engorgement of the sub-urethral cellular tissue, deviations of the canal, and the formation of culs-de-sac, in which the matter accumulates. Pressure made under the urethra will then press out a quantity of pus, the existence of which mere inspection could never have made known. These engorgements and collections, in their turn, become the means of keeping up the irritation and inflammation, especially when the practitioner is not aware of their existence. These obstinate cases are then best treated by making sub-urethral compression by means of a plug of tow or charpie. This mode of treatment M. Thiry has long followed with great success—whether as the sole, or as a powerful auxiliary means. A firm plug, of a suitable size, is introduced into the vagina, so as to take its point of support at the posterior commissure, and press the urethra against the pubis.

ART. 157.—*On the various forms of Vulvitis.* By Dr. SIMPSON, Professor of Midwifery in the University of Edinburgh.

(*Medical Times and Gazette*, April 16, 1859.)

The vulvæ are liable to other types of inflammation besides the simple inflammatory or phlegmonous, and also quite independently of any syphilitic origin. Various forms of eruptive inflammation are

liable to appear in this part of the body, and particularly in some females at the menstrual period, and in others in consequence of the acridity of the discharges which may pass from the vagina at other times, and under states of internal disease. Thus, these parts are the occasional seat of attacks of erythema, eczema, &c. Herpes occasionally appears, generally after some constitutional disorder, on the external labia or vulva, of the same form and running the same course as herpes labialis, or rather, as herpes preputialis in the male. Dr. Simpson has seen also very distinct herpes upon the cervix uteri. Various other forms of acute and chronic inflammatory eruption may appear in these parts, but they require no special notice, as they require no treatment specially different from the same diseases when situated elsewhere. One of the most common varieties of eruption on the vulva consists of an affection like acne, *i. e.*, it consists of scattered tubercles, sometimes of considerable size, formed by inflammation of the follicles of the vulva and nymphæ. But there are some forms of specific inflammation, if we may so call them, of the vulva, some varieties of vulvitis, if we may so speak, which call more particularly for notice, such as papillary vulvitis, purulent vulvitis (which is liable to occur in infants), gangrenous vulvitis, or noma, &c.

1. *Papillary Vulvitis.*—"This is a form of chronic inflammatory disease of the vulva which is fortunately not very frequently met with in practice, but when it does occur, it is usually accompanied with much distress, and is often very obstinate in the way of cure. By this term, papillary vulvitis, I mean a chronic inflammatory affection of the mucous membrane of the vulva, and sometimes of the vagina, in which that membrane presents an intensely red colour, either in raised red patches on the edges of the lower vagina folds, on the tips of the carunculæ myrtiformes, or the nymphæ, or on the sides of the vulva, or more generally diffused over a large portion of the surface of the vulva. On these red patches or surfaces you find, on examination, the enlarged mucous papillæ standing out like the swollen villi of a raw and irritable tongue. Often some of the most elongated papillæ bleed at their tip when touched. Any rough pressure of the vulva gives pain to the patient. The disease may be found in the unmarried, but not frequently; it comes on after marriage, and produces such tenderness of the parts that sexual connexion is attended with much suffering, or becomes impossible. Usually, indeed, there is a sort of spasmodic contraction of the orifice of the vagina aggravating the evil. Along with the red and enlarged papillæ you will sometimes, but not always, find interspersed the small follicular glands of the vulva, swollen and inflamed, and sometimes ulcerated.

"*Treatment.*—Patients affected with this disease anxiously demand professional relief, as their happiness as well as their health is sometimes destroyed by it, and the treatment, as I have already hinted, is sometimes by no means easy. I have known the diseased surface treated heroically and perseveringly with a repetition of strong caustics; but the simplest and surest mode of cure, according to my experience, consists in the continued use of local astringent measures, combined when necessary with sedatives, such as a strong solution or liniment of tannin frequently applied during the day, and with morphia

or other sedatives added to it. Or you may dissolve your astringent in glycerine, and in this form it will remain more permanently in contact with the diseased surface. Latterly, I have trusted principally to the daily free application of a saturated solution of perchloride of iron in glycerine—an application producing little or indeed no pain—and I think with the happiest effects. General tonics, warm bathing, &c., must not at the same time be forgotten.

2. *Purulent Vulvitis, or Leucorrhœa in Infants.*—"This is a form of inflammation of the vulva which is by no means infrequent in female infants and children. It is, perhaps, however, more interesting and important in its medical jurisprudence relations than in its purely practical aspect; for, very often, especially when it occurs in patients of the lower orders, the disease is properly imagined, by the relatives and friends of those attacked, to be the result of venereal infection. The child is brought to the medical practitioner, under the idea that he will confirm this unhappy and dangerous notion. An excitable mother will, by threats and by suggestive and leading questions, get the frightened child to own to some absurd and groundless tale, in confirmation of her maternal theory of the origin of the malady; and no doubt men have been repeatedly tried, and convicted too, of imparting this disease to young children, by forced sexual connexion, when they were totally innocent of such a crime, and when the affection had totally a different origin; for the purulent vulvitis, or leucorrhœa, seen in young female children, has, as a general rule, no more an impure sexual origin than has inflammation of the eyes, throat, or lungs. Like most other local inflammations, it usually arises first from some degree of deranged or impaired general health in the patient, and secondly from the patient, when in this, it may be quite temporarily, depressed condition, being exposed to cold and wet, or the other exciting causes of inflammation. Want of cleanliness, the irritation of acrid urine, &c., sometimes act as a local exciting cause. Like angina, diphtherite, and some forms of catarrh and dysentery, this inflammation of the mucous membrane of the vulva, like those inflammations which I have named of the mucous, pulmonary, and intestinal membrane, attacks more than one child in the same family, and may even prove partially endemic or epidemic in a district.

"*Symptoms and course.*—The disease usually begins with local heat and itching; some degree of redness and swelling; pain and scalding in passing water, and sometimes uneasiness in walking; but for the first twelve or twenty-four hours there is no discharge from the inflamed mucous membrane. But you will seldom see the disease in this early stage. Almost always you are called upon to see or prescribe for the patient, because the affection has so far run on in its course, that there is already more or less discharge from the vulva. The discharge is, at first, of a thin mucous character, but rapidly becomes purulent and yellow, or yellowish-green in its tint. Occasionally the discharge becomes extremely profuse. It is apt to become thick and hardened along the outer edges of the external labia, binding these opposed edges slightly together by a kind of imperfect crescentic crust; but when the labiæ are drawn asunder, the whole surface of the vulva is found to be covered over by a layer of the liquid puriform

secretion. The disease very rarely extends upwards into either the vaginal or urethral canals. Occasionally there is, at points, an appearance of vesicular or pustular eruption; and, indeed, some type of mucous eruption in the part would probably be discerned as a common, if not constant phenomenon, if we had an opportunity of searching for it early in the course of the disease. Sometimes, but by no means frequently, there supervene one or two spots of ulceration, especially towards the orifice of the vagina.

"*Treatment.*—Acute infantile leucorrhœa shows, like many other analogous ailments, a natural tendency to run through a definite, and often not a very long course, and has a natural tendency to end in a spontaneous cure. But if not arrested, it sometimes ends in a chronic, protracted form of discharge; and our medical interference is required, not only to prevent this termination, but also to relieve the patient from the immediate distress and annoyance which the disease produces.

"In the first stage of the affection you will often find your patient requiring some little constitutional treatment. A dose of calomel, or grey powder, with a few grains of some aperient alkali, as magnesia, is sometimes all that is necessary; but it may require to be repeated. If the discharge becomes protracted, chalybeates or other tonics may become necessary. Use, in short, your constitutional remedies here as elsewhere, to bring the constitution and its principal functions as far as possible to the normal standard of health, and cure the local disease by appropriate local applications.

"In the earlier and more inflammatory periods of the disease, use locally to the vulva sedative applications; in the latter periods, and for the purpose of reducing and arresting the attendant discharge, use astringent applications. And you may employ these local applications in the form of lotions, or liniments, or ointments.

"Frequent ablution with warm water, or warm milk and water, is one of the best and most soothing applications; and sitting in a warm cup-bath during micturition is one of the surest means of relieving the pain and scalding attendant on the passage of the urine. A solution of acetate of lead, or two grains of acetate of lead and one grain of acetate of morphia to the ounce of water, makes a good sedative lotion when there is much local smarting and pain; or you may use a weak solution of borax, or of nitrate of silver. When sedative lotions are preferred, it is generally necessary to leave a slip of charpie, or lint, wetted with them between the labia.

"But I think you will find the local affection more manageable under sedative liniments; as by applying several times a day with a brush or feather, cold cream, with, if you think fit, a little morphia added to it; or a liniment made of equal parts of olive oil and lime-water. Liniments are more lasting as local applications than lotions; and not so liable as ointments to fret or irritate.

"But the time soon arrives when you must add local astringent remedies to the sedative, or substitute the former entirely for the latter. With this view, use tannin, or sulphate of zinc, or aluminated iron, or any analogous astringent, in the form of a lotion or liniment; but take care not to use them of such strength that they prove irri-

tant in their action, so as to force you back again, for a day or two, to the sedative treatment.

3. *Gangrenous Vulvitis or Noma.*—"A variety of vulvitis seen sometimes, but fortunately very rarely, in practice, which generally begins with erythematous inflammation of the vulva, and the formation of one or two blisters or bullæ, and rapidly runs on into gangrene and phagedæna. This gangrenous vulvitis has been seen in adults as a complication in particular epidemics of puerperal fever; and in infants it has been observed either under an epidemic form, like epidemic gangrenous or malignant sore throat; or in isolated cases—most frequently as a sequela of scarlatina, measles, and other debilitating forms of febrile disease—or as a result of some constitutional cachexia. The disease not infrequently runs on to a fatal termination.

"*Treatment.*—You will generally find your patient requiring early, or even from the first, stimulants and quinine. If these are not yet called for, trust to considerable doses of chlorate of potass; or of this and muriate of iron every two or three hours. Apply poultices and sedatives locally in the early stages of the disease, at least. The progress of the gangrene has, it is said, been sometimes arrested, or appeared to be arrested, by the application of nitric acid, &c.

4. *Prurigenous Vulvitis.*—"Not infrequently a prurigenous eruption appears on the mucous membrane of the vulva, and extends up along the vagina as far as the cervix uteri. It extends also often, and is sometimes, indeed, originally situated on the cutaneous border of the vulva, and appears on the outer cutaneous surface of the labium, spreading backwards along the perineum to the circle of the anus. Occasionally, it is a flitting and transient affection, recurring with menstruation, pregnancy, or delivery. But patients will apply to you from time to time, in whom the disease has become more chronic and fixed, having lasted for weeks, or months, or even years, producing almost constant irritation and distress; frequently interfering with rest and sleep, and rendering the victims of it miserable and almost deranged. When the disease has become somewhat chronic, and necessitates the patient to attempt to alleviate it by constant and sometimes rough friction, you will find the mucous and even the cutaneous surface at the most irritated parts white and thickened with red fissures, and scratches appearing on the affected part. I have spoken of the disease as fundamentally prurigenous; and we can often see on the affected surface a small papular, and sometimes a vesicular, or even aphthous eruption; but cases ever and anon occur, of severe pruritus in these parts, without your being able to trace in them any distinct eruptive appearance.

"*Treatment*—Prurigenous disease of the vulva or neighbourhood can be relieved, and generally cured, by the assiduous and persevering application of a solution of biborate of soda (five or ten grains to the ounce of water), infusion of tobacco, either alone or containing a similar quantity of borax dissolved in it, or an ointment of iodide of lead (one drachm to the ounce), or an ointment of bismuth and morphia. Chloroform also applied locally, in the form of vapour, liniment, or ointment, forms one of the most certain means which you can use. The simplest way of employing it is by adding a drachm of chloroform

to an ounce of any common or sedative ointment or liniment. You will find great advantage in the management of the disease in alternating some of these local applications with each other, for most of them begin to lose their good effects when persevered in above a few days consecutively. In the more obstinate and severe cases, strong astringents are sometimes of the greatest use, employed either alone or along with sedatives, as a very strong solution or ointment of alum or aluminated iron or tannin; or the powder of these substances mixed up with some powdered morphia, and applied continuously, for a few days, to the irritated part. Several times, in very obstinate cases, and where the disease was limited to a portion or circle of the cutaneous tissue, I have temporarily separated the affected portion of skin by a free subcutaneous incision with a tenotomy knife. Of course it leaves no wound except the small wound left by the entrance of the knife itself. I have found this little operation perfectly and entirely successful in some cases, and only of temporary benefit in others.

"Perhaps it is unnecessary to add that the general health of the patient must be fully attended to, and that sometimes arsenic, aqua potassæ, and other alterative medicines of that description, are required."

Art 158.—*On Coccyodynia.* By Dr. Simpson, Professor of Midwifery in the University of Edinburgh.

(*Medical Times and Gazette*, July 2, 1859.)

Cases such as the one here related do not appear to be described in any book, and the operation also has the merit of novelty.

Case.—"E. F—, a married female, æt 40, has never had any children, but menstruated regularly and painlessly, and enjoyed good general health until about two years ago. At that time her menstrual discharges began to be more profuse and frequent than usual, and to be attended at times with pain. This she for a long time disregarded, believing the phenomena to be due to the 'change of life;' but as she was becoming gradually weakened by the excessive losses of blood, she applied at my house for advice, about six or eight months ago, just after recovering from a severe attack of menorrhagia of three weeks' duration. In addition to the bloody discharges, and at the intervals between them, she suffered from a constant, fetid leucorrhœa; and she also complained of occasional shooting pains in the back and lower parts of the abdomen. She was much emaciated, and had a very cachectic appearance; and my nephew, Dr. Alexander Simpson, who then saw her, found the cervix uteri to be very much enlarged, indurated, and ulcerated; and it felt rough and irregular, like a commencing cauliflower excresence, and bled freely when rudely touched. The ulceration and induration were not distinctly limited to the cervix, however, so that no hope could be entertained of curing the disease by amputation of the cervix uteri. But the dried sulphate of zinc was applied on several occasions, with the happy result of causing nearly the whole of the indurated and infiltrated mass to slough away, and there is now left a firm and healthy cicatrix. The patient does not now suffer from any unusual loss of blood, although she menstruates freely and regularly; and, so far as regards the uterus, she may be considered perfectly well, if we except a small hard knot in the anterior lip of the cervix, which

may still, perhaps, be regarded as suspicious. But as she recovered from her uterine disease, and as the symptoms attendant on it began to disappear, she commenced to complain, after sitting on the damp grass in her avocation as a washerwoman, of a dull, aching pain seated in the very lower extremity of the spinal column, for which my nephew contented himself with prescribing in the first instance a belladonna plaster, and afterwards various local anodynes and general tonics for a space of two or three weeks. As this pain, however, instead of abating, seemed always to become more constant and harassing, and as the patient could not sit down except on one hip at a time, and even then with the greatest suffering, an examination was made of the painful part, when it was found that the coccyx was unusually straight and long, so that it reached far backwards and downwards, while the very tip of it was felt through the rectum to be projected suddenly forwards. *Pressure of the coccyx and movement of it in any direction caused pain.* To subdue this sensibility thirty drops of a watery solution of the bimeconate of morphia were twice injected into the soft parts around the bone, on two different occasions, and with an interval of several days between each injection. This measure had the effect each time of deadening the pain, but it led to no permanent result. The next step employed for her relief was the separation of the coccyx from all the surrounding muscles, tendons, and ligaments, which was done subcutaneously, with a tenotomy knife. Three or four weeks afterwards the patient returned, saying that for a time she had felt better, but that during the last week she had suffered as much pain as ever, and was incapacitated for work from it. She was, in consequence, sent into the hospital; and on Saturday, June 3d, I removed the two lower segments of the coccyx by cutting down upon them through the skin, and dividing the bone with a pair of bone-pliers; and then the separated portion being pushed through the wound by the finger of an assistant passed into the rectum, it was easily detached from the soft parts, and so removed. The edges of the wound were brought together with two iron wire stitches, which were removed some days afterwards, and the wound is now almost closed up.

"Amputation of the coccygeal bones has been had recourse to in this patient, as it seemed to afford her the best chance of relief from a peculiar form of disease, which is anything but rare, although no written account of it has, as far as I know, yet appeared. If you will take the trouble to make inquiry of observing men in extensive practice, or if you have the opportunity of making the observation for yourselves, you will find that cases are ever and anon occurring, where the patient complains of pain in the region of the coccyx, very constant, and aggravated by certain movements of the trunk, and usually attributed by the patient to some kind of direct injury, or to exposure to cold. The most common cause of the disease, so far as I have been able to discover it from inquiries addressed to the patients themselves, is injury of the coccyx, inflicted either by falling backwards upon it, or, more frequently still, brought on by sitting down suddenly and forcibly on the corner of a chair or other angled body. Often enough, however, it is impossible to trace it to any traumatic origin; and the patient can only tell you, as in the case of our patient in the hospital, that she had been sitting on damp grass, or had been otherwise exposed to cold before she began to experience the pain; or she may be altogether unable to adduce any assignable cause. I say she, because all the patients whom I have yet seen affected with this disease have been of the female sex; although I presume it is not entirely confined to them, and it is even not very clear why they should be more subject to it than the members of the other sex. I have said that when you have been made aware of the possibility of the occurrence of this complaint, and when you begin to look

out for it, it is by no means very rare. Diseases, like other objects in nature, sometimes seem rare, not because they are so in reality, but merely because our attention has not happened to be fully called to the recognition of them as they pass before our eyes. I think you will hold me justified in making this remark, when I tell you that within the last three weeks I can count up at least ten cases of this particular malady which I have seen in private or consultation practice. Of course, it is a very unusual circumstance to meet with so many during such a short period; but it is not more wonderful than what often enough occurs in the experience of all surgeons in extensive practice, who find that during a short space of time they may have a succession of cases all presenting the same form of injury, as an epidemic, as it were, of fractures or dislocations, and that a long period may elapse before they again meet with a similar case. Such a rapid succession of cases of the kind I allude to is, I repeat, of course an exceptional occurrence. But I know of old, and, on looking back upon many past years of practice, that I have seen and recognised a great many cases of this disease; and I have probably seen many others also, the true nature of which I did not at the time understand. It is, therefore, I believe, by no means an uncommon disease."

Speaking generally of the symptoms of coccyodynia, Dr. Simpson says: "The leading symptoms of the disease is pain in the region of the coccyx experienced by the patient whenever she sits down and rises, and sometimes while she remains in a sitting posture. Most of the patients affected with it are obliged to sit on one hip, or with only one side resting on the edges of a chair, or with the weight partially supported by a hand on the chair; and they are rendered sometimes very awkward and miserable in consequence. Some of them actually dread sitting down—so great is the pain then felt; and not only so, but, as I have hinted already, the pain is in many cases aggravated or renewed whenever it becomes necessary again to resume the erect posture. There are other movements of the coccyx besides, which are liable to be attended in such cases with pain. Thus some patients have pain with every step they take in walking, while in others the movements of progression excite no uneasiness whatever. Others, again, feel the pain most when the bowels are being evacuated, or under any circumstances in which the sphincter or levator ani, or the ischio-coccygeal muscles are called into action. The pain is not in every case very acute or intolerable; and you will sometimes meet with patients who have borne with it for many years, sometimes without having sought any relief at all, sometimes in despair from the inefficiency of the remedies that have been employed. I have under my care just now a patient suffering from menorrhagia, who tells me she has been annoyed more or less for about twenty years with a pain of this description in the coccyx, not very severe, but which she has never found any means of alleviating, though formerly she consulted various physicians and surgeons on the subject. Again, the pain is not at all times equally severe in the same patient. When in Cumberland lately, I saw a lady who had kept her bed the whole winter, because of excruciating pain which she experienced in attempting to sit upright or walk about; but who, at the time when I saw her, had got so far relieved as to be able to move about a little. The distinguishing feature of the disease in every case is that the pain is felt at the

lowest part of the spine, or rather in the site of the coccyx, to which it is always specially referred by the patient, and where pressure always aggravates it. Pressure and movements of the coccyx, too, with the finger in various directions, produces pain, and the kind of movement which is thus attended with suffering, differs in different cases."

The following quotations will serve to give Dr. Simpson's views with respect to treatment:

"All kinds of constitutional treatment, and most forms of topical applications, are often almost or altogether of no avail for the cure of this disease; and the only means of obtaining radical relief—and happily it is a means which proves successful in almost every case—is the complete separation from the coccyx of the muscular and tendinous fibres that are in connexion with it. To effect this, you must introduce a tenotomy knife underneath the skin, at a short distance from the tip of the coccyx, pass it along the posterior aspect of the bone, and then divide the muscular and tendinous attachments, first on one side and then on the other, and finally all round the tip of it. It is not in every case necessary to make such a free division as I have indicated. In some instances division of the fibres of the gluteus maximus of one or the other side will suffice, or detachment from the coccyx of the sphincter and levator ani may be all that is requisite for a cure. This simple operation is easy and rapid of performance, like other examples of subcutaneous surgery is not attended with bleeding, and is attended with no great degree of suffering; and the result is in almost every case instant relief of the pain, and in most cases a perfect and permanent cure of the disease." * * * *

"I have met with one or two cases of coccyodynia, however, which I have failed to cure by means of this operation; and where division of the muscular and tendinous fibres—even the most complete—and thus setting the coccyx perfectly free and perfectly at rest for a time, has merely cased the pain temporarily without relieving the patient of it altogether. In our patient in the hospital the operation proved thus unsuccessful, and, therefore, I put in practice, what I had often thought of having recourse to, the more radical measure of removing altogether the coccyx or a portion of the bone. This amputation of some of the segments of the coccyx was resolved on the more readily in her case, because in her the several bones of it seemed firmly anchylosed, and it at the same time projected unusually low down, and was turned suddenly inwards at the tip. Making an incision of about two inches in length through the skin stretched tightly over the end of the bone, I exposed the latter, and having separated it from its connexion with the soft parts, and divided it between the second and third of its vertebræ with a pair of bone pliers, its two lower segments were easily removed. I have another patient suffering from this disease, in whom I have repeatedly had recourse to the isolation of the coccyx by means of the tenotomy knife, but always with the effect of producing only a temporary relief; and in her case I have long proposed to perform an operation similar to that performed in the patient in the ward, if the results prove as favorable as we desire,

and as there seems at present every reasonable prospect of attaining. Removal of portions of the coccyx is an operation that has been performed more than once before, in cases of necrosis in some of its segments; but I believe its performance under the circumstances I have been describing to you, is altogether novel.

"I have said, that as a general rule, the result of constitutional treatment of any kind affords us little hope of being able to cure this disease by its adoption. But, as I have already hinted, there is a class of cases, of which I have seen a few rare instances, where the pain seems to partake somewhat of a neuralgic character, and where I think I have seen the patient benefited by the use of the remedies which are usually employed for the cure of neuralgic affections. At all events, wherever you find a patient complaining of pain in the coccyx, who at the same time is affected with pains in the other parts of the body, and who has the unhealthy chlorotic aspect common to those subject to neuralgia, you would do well in such a case to put your patient through a course of iron, arsenic, zinc, manganese, or other nervine tonics, or to make her use some of them in combination for a time. By this means you may possibly succeed in curing the coccyodinia and in dispelling her other symptoms; and should that plan of treatment fail in effecting a cure, it will still form a very good and safe measure preliminary to the adoption of the severer but more certain operative procedure. I would only add, in connexion with this point, that there is a leash of nerves lying all round the coccyx; and I once imagined that the relief obtained by isolation of the bone was due to section of these nervous cords; but now the explanation of the phenomenon which I have already given you seems to me to be the more probable, and that when the coccyx is separated from the surrounding tissues, no more pain is exerienced, because the bone is by this means freed from the action of the muscles formerly in connexion with it, and is thus placed in a condition of absolute rest."

Art. 159.—*On Ergot of Rye in Hæmorrhage of the unimpregnated Uterus.* By Dr. Trousseau.

(*L'Union de Méd.*, No. 36, 1859.)

The patient who was the occasion of these remarks suffered from carcinomatous metrorrhagia; and her case furnished a new proof of a fact which is more common than it is generally believed to be, that the most frightful cancers of the uterus may reach their last stage without causing pain; while in other cases, a cancerous affection that has made but little advance, may give rise to intolerable suffering. In the year 1832, M. Trousseau, together with M. Maisonneuve, tried a series of experiments with ergot on a large scale, in uterine hæmorrhage, whether resulting from delivery, abortion, cessation of menstruation, carcinoma, or the presence of polypus or tumour. The results were, that the hæmorrhages of women recently delivered were rapidly arrested, this medicine being the most rapid and the most certain in its effects. Even when it is powerless it is entirely harmless; but, in

general, its efficacy is real from the moment when uterine contraction commences, the hæmorrhage being arrested, although the woman may lose blood for some hours. The contradiction is only apparent. Hæmorrhage, is, in fact, not constituted by the flow of blood from cavities into which it has been long since poured, but by its leaving the vessels in which it is circulating. Now, when after delivery, we give the ergot to combat the inertia of the uterus, the primary cause of the metrorrhagia, we provoke the issue of the blood contained within the uterine cavity; and such hæmorrhage, which is only apparent, only ceases after the entire expulsion of the blood extravasated within a certain time. As to the real hæmorrhage, it is arrested by the contraction of the muscular fibres of the uterus, and the occlusion of the gaping sinuses.

In the hæmorrhages arising from abortion, advantageous results were also obtained; but the loss of blood was not arrested so rapidly as in hæmorrhage after delivery, and in the hæmorrhages which occurred at the period of the menopausia, its operation was so slow and uncertain that preparations of rhatany or sulphuric acid were preferred.

The ergot was also tried in carcinomatous hæmorrhage, and to the great surprise of the experimenters, succeeded almost as rapidly as in post-partum hæmorrhage, and more rapidly than after abortion. Of course fungoid, or encephaloid cancers, from which a more or less sanguinolent sanies is always issuing, are not those meant, but cancer accompanied by hæmorrhage, which returns every ten or fifteen days, lasting three or four days. In seeking for an explanation of this occurrence, we may compare the state of the uterus, when the seat of cancer, to the organ in the impregnated state—a hypertrophoid state of the muscular fibres being present in both cases. Louis' researches have already shown us that in cancer of the stomach, there is hypertrophy of the muscular tunic, not only when the pylorus is the seat of the affection (which would be explained by the increased effort required to surmount the obstacle opposing the passage of the aliments into the duodenum), but also in cancer of the large curvature.

With respect to the influence of ergot on internal hæmorrhages in general, such as epistaxis, hæmatemesis, hæmoptysis, &c., the experiments were not attended with success, or success, when obtained, could not be positively attributed to the treatment employed. Nothing is more difficult, in fact, than to judge of the efficacy of a medicine in hæmorrhage, an accident which is so essentially temporary, and of such variable duration. It is not possible to determine upon the action of a hæmostatic, except when, in the same individual, the hæmorrhage, after being reproduced with its particular characters, is then suspended by the action of the remedy. A woman, for example, is the subject of metrorrhagia, which usually lasts four or five days; and if on giving her the ergot it continues only twenty-four hours, to return again in its ordinary manner on the suspension of the remedy, we may then decidedly assert that the medicine is of service. But the other varieties of hæmorrhage are essentially transitory, hæmoptysis, or hæmatemesis, occurring at near or distant intervals, never to be foreseen or determined. In the majority of cases, too, these bleedings

stop spontaneously, and medicines that may have been administered, sometimes acquire a reputation to which they have no right. At all events ergot, or ergotine, has no advantage in these cases over any of the numerous other hæmostatic agents: and if it is more successful in the case of uterine hæmorrhage, it is not so because it acts upon the hæmorrhagic element itself, but because it exerts a special action upon the uterus, by virtue of which the fibres of this muscular organ undergo contraction.

Professor Trousseau concludes his remarks by referring to another case he had treated with large doses of digitalis, as recommended by Dr. Howship Dickinson. The hæmorrhage did not recur, but as it had already stopped prior to the administration of the medicine, the case proved nothing more than the innocuity of the medicine in infinitely higher doses than the professor had ever before employed it. He thinks the method well deserves further investigation.

ART. 160.—*Inverted Uterus replaced after a lapse of nearly twelve months.* By Dr. WEST, Physician-Accoucheur to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, Oct. 29, 1859.)

In this case Dr. West adopted the plan by which Dr. Tyler Smith accomplished the replacement of an uterus after it had been inverted for twelve years ('Abstract,' XXVII, p. 218).

CASE.—A. A—, æt. 25, applied at the out patients' room of St. Bartholomew's Hospital, August 27th, 1859, when she gave the following history of herself:

She had been married five years, and had given birth to two children, of whom the former was born after a natural labour two years and a half since; the second on October 16th, 1858. The child in this instance also was born alive after an easy labour, but the placenta was retained for three and a half hours, during which time very great hæmorrhage took place, and in consequence of it the patient became insensible, and was, therefore, unable to say whether it was eventually removed by hand, or expelled by the natural efforts. She was left by her labour in a state of such extreme weakness that she was quite unable to suckle her child, and suffered in addition from much pain in the abdomen and diarrhœa. These ailments confined her to bed; and at the end of five weeks phlegmasia dolens of the right leg came on, for which leeches were applied, and other treatment was adopted, until, at the expiration of seven weeks, she sought admission into the London Hospital, where she remained for a month, and left the hospital much benefited as far as that ailment was concerned.

Soon after leaving the hospital, and about three months after confinement, the menses first reappeared. From the first they were profuse, and intermingled with coagula; they lasted longer than natural, and returned more frequently, and for some time she had completely lost count as to when her periods were due, so frequent was their return, so almost constant their presence, while an abundant yellowish leucorrhœa appeared immediately on the cessation of the sanguineous discharge. The return of the hæmorrhage compelled her on each occasion to keep her bed; but in spite of this precaution

she had been reduced by it to a state of the most extreme exhaustion, her skin was sallow, her pulse very feeble and very frequent, and she had the aspect of a patient suffering from advanced malignant disease.

On making a vaginal examination, a tumour of an oval form was discovered hanging down for about two inches and a half through the os uteri, which closely surrounded, but did not constrict it. Suspicion was raised as to its nature by finding that the pedicle of the tumour was of the same thickness as its extremity, and also by the fingers when passed up behind it encountering a cul-de-sac, as if the uterus, with the exception of its orifice, were inverted. Hæmorrhage was not excited by the examination, but a rather abundant blood-stained purulent leucorrhœa. The patient was at once admitted into the hospital, and on the 29th the diagnosis was established by the following means:

1st. The uterine sound carried round the pedicle of the tumour encountered resistance to its further passage all round at the distance of half an inch. The finger, though introduced easily behind the tumour, could not be passed in front of it, as the anterior lip was too closely in contact with it.

2d. The fingers introduced into the rectum could without much difficulty be carried above the fundus of the tumour, showing that the body felt per vaginam was not an outgrowth from the uterus, but the uterus itself in an altered position.

3d. If, while one hand was in the vagina the other was pressed firmly over the symphysis pubis, at first, no body was felt between the two hands. Pressure made against the tumour in the vagina, however, brought it before long within the grasp of the other hand, when it was possible, through the thin abdominal walls, not only to distinguish its contour, but even to perceive the circular depression in its upper part which indicated the point of inversion of the womb.

Dr. Tyler Smith's case suggested an imitation of his proceedings, and, accordingly, after efforts made with the hand by grasping and compressing the womb to restore its position, or at least to render it more yielding, an air pessary was introduced into the vagina and inflated to as great an extent as the patient could bear. On the following morning the os uteri was found much more dilated, and its tissue much more yielding, so that the fingers could now be passed all round the tumour with ease, and everywhere discovered the inversion of the substance of the womb. Manipulation of the inverted uterus was repeated daily until the 5th of September, and the pessary was on each occasion reintroduced and reinflated, with the exception of one day, on which it was discontinued, in order to obtain relief for the bowels.

It did not seem, however, that much was gained by the proceedings beyond that increased dilatation of the os which was obtained by the first introduction of the pessary. The vaginal walls, indeed, were rendered more yielding by the extension to which they had been subjected by the pessary, so that the whole uterus admitted of being pushed up in the pelvis more readily than before, but no change was effected in the relation of the inverted body itself. A very offensive leucorrhœa had been excited by the pessary, and its distension had occasioned a very painful stretching of the vagina; but in spite of this the patient's health was already much better than at the time of her admission; she had already gained strength, and her complexion had lost something of its sickly hue.

I now attempted to modify the instrument, and had a pessary constructed so as to expand at its upper third more than elsewhere, in order to avoid needless stretching of the vagina; while it was fitted, by means of a wire stem, to a girdle which encircled the body in order to obtain a fixed point

from which the pressure should act; a condition altogether absent in the air pessary, as at first employed.

This was first tried on September 20th, the patient having remained since the 5th without any attempts at the replacement of the organ. Some advantage seemed to be gained by the pessary thus modified. It retained its position well, and seemed to produce less discomfort, and to cause a less profuse and less offensive discharge. Still it did not appear to exert any influence on the uterus itself, its force being rather expended in stretching the vagina.

After a few days' trial I accordingly removed it, and had another constructed of smaller dimensions, under the impression that if it were introduced within the os uteri and there inflated, it was more likely to expand the uterine walls, and thus to replace the organ, than by any mere pressure exerted from below upwards against the fundus of the womb. On October 3d this new apparatus was introduced for the first time, and though no effect was produced in the first twenty-four hours, it was reintroduced on the 4th, and allowed to remain for forty-eight hours in its position. On the 5th the patient complained of a good deal of pain in the abdomen, though not of more than she had experienced on some former occasions; and it was with a feeling of glad surprise that on the 6th it was discovered that the organ had resumed its natural position.

The os uteri was widely open so as readily to admit two fingers, and its lips were much swollen, the uterine sound passed nearly three and a half inches, and the womb was now felt in its natural position by the hand placed over the pubes. The patient was kept quiet in bed, and for the next twenty-four hours, the urine was drawn off by the catheter. On the 7th the sound ascertained that the womb still retained its proper position. Menstruation came on on the evening of that day, and continued scantily until the 11th; and on the 13th the sound discovered the uterus to have somewhat contracted, and now to measure scarcely three inches; and on the 18th the patient left the hospital apparently in perfect health, and having walked about for some days without inconvenience.

The sole merit in such a case rather belongs to the person who first suggested the proceeding, and first by actual experiment proved its utility; but a few remarks on the best mode of employing it may be of service to those who hereafter may meet with a similar case.

1st. Neither in this case or in another which came under my care, some ten years ago, did any benefit appear to result from manipulation of the womb, or from any attempts with the hand to replace the organ, or to reduce its bulk. The utility of such endeavours will, I apprehend, be limited to instances of recent inversion, or to those exceptional cases in which the womb remains comparatively yielding and flaccid some weeks after the occurrence of the accident, as it appears to have done in those reported by Dr. Belcombe, and Dr. Miller.

2d. Many inconveniences attend the employment of the common air pessary, partly from the want of some fixed support to retain it in its place, and partly from the circumstance that the pressure it exerts being equal in all directions, a most painful distension of the vagina is inseparable from any attempt to exert efficient counter pressure against the inverted womb.

3d. This disadvantage may be easily overcome by means of a belt to fasten round the waist, the anterior half of which, made of steel, serves as a fixed point for a metallic wire, which is attached to a small wooden disc or cup that bears the pessary. The pessary itself, made of vulcanized india-rubber, and in this instance four inches long by five in circumference at its middle, was rendered comparatively inelastic at its lower half by the introduction of

several layers of linen between the folds of the india-rubber, while no such material intervened to prevent the full expansion of its upper half when it was filled with air by means of the syringe through the elastic tube that was connected with it. By this means continued pressure was exercised against the fundus of the inverted uterus, without painful distension of the vagina.

4th. I am uncertain as to the exact mode in which the replacement of the uterus is effected, and doubt whether it is due to the direct pressure of the pessary against the fundus of the uterus, so much as to the unfolding of the uterine wall by the instrument when introduced into the shallow cul-de-sac within the os uteri, formed by the still uninverted portion of the cervix. If this supposition be correct, one's endeavour in any future case would be, first, to introduce a small pessary within the os, in order to dilate the aperture, and to follow this up by the employment of one somewhat larger, with the view of thus unfolding the wall of the organ, rather than to force the fundus upwards by direct pressure against it.

Art. 161.—*Death from injection of Carbonic Acid Gas into the Uterus.* By Dr. Scanzoni.

(*Beitr. zur Geburtsk.*, t. iii, 1858; and *Med.-Chir. Review*, July, 1859.)

Case.—In this case it had been determined to amputate the neck of the uterus in a woman who was pregnant, the pregnancy being masked by attendant circumstances. The father of the patient, himself a physician, wished to practise for a few days injections of carbonic acid into the cavity of the neck, hoping by this means to produce a contraction of the vessels and to obviate the hæmorrhages which so often complicate amputations of the uterine neck. He tried a first injection with the aid of an elastic reservoir; but scarcely had two or three cubic inches of gas penetrated the gaping mouth of the neck, when the patient cried out that she felt air entering the abdomen, head, and neck. Immediately afterwards she was seized with general tetanic convulsions; respiration became laborious and stertorous; the pulse rapid, small; the extremities grew cold, and death followed at the end of an hour and three quarters. The autopsy revealed nothing but considerable pulmonary œdema. The uterus, much thinned, contained a four months' fœtus; it seemed that the hypertrophy, of which the body of the uterus is the seat in normal pregnancies, had been entirely expended on the neck. The mode in which death was caused is not clear; but the case suggests that extreme reserve should be used in resorting to injections of carbonic acid, whether for the purpose of producing anæsthesia or premature labour.

Art. 162.—*Case of Vesico-uterine Fistula.* By Dr. Fleetwood Churchill, Professor of Midwifery to the King and Queen's College of Physicians, Ireland.

(*Dublin Quarterly Journal of Med. Science*, May, 1859.)

Mixed cases, in which the lesion involves vagina, uterus and bladder, are more common, and have been recorded by Jobert, Simpson, and others; but those in which the vaginal canal is entirely uninjured are rare; indeed, Dr. Bozeman, the most recent, and one of the highest authorities on these lesions, has avowed his disbelief in their existence.

Case—A lady, æt. 30, who had been confined in India of her second child, in June, 1858, after a very tedious labour, terminated by craniotomy. She recovered pretty well, but about the tenth day remarked that the urine escaped involuntarily, and that she could pass none in the natural way.

She came to consult me as to what was best to be done, in September, 1858, bringing a note from a medical man in Wales, mentioning that the opening from the bladder was into the uterus, and not into the vagina.

On examination, in which I was assisted by Dr. Collis, I found the entire vagina uninjured, and by the speculum we could see the urine welling up through the os uteri. I then introduced a catheter into the bladder, and readily passed it through the fistula into the cervix uteri, where we could touch it with another through the os uteri. So far as we could ascertain, the fistula was in form of a vertical slit in the cervix, and was of considerable size, probably extending to the body. Her health was very good, and, what was a great advantage, the parts had not been excoriated by the urine.

It was very obvious that the choice lay between two operations : either I might slit up the cervix, expose the vesical opening, and close it by ligature, or I might pare the edges of the os uteri, and passing ligatures through it, attempt to produce adhesion of the opposite side, and so close the fistula.

The objections to the former operation were, that it involved more danger from the close neighbourhood of the peritoneum, and that if, escaping this, the ligatures failed, we should leave the patient worse than we found her. The latter operation had the advantage of incurring no danger of leaving the patient "in statu quo ante" if it failed, and of affording effectual relief if it succeeded. It is true it involved, of necessity, sterility; but hardly more certainly, I think, than the perpetual current of urine through the cervix, and, as it offered a chance of relief from a disgusting infirmity, sterility appeared to me and to the patient the lesser evil of the two. As regards menstruation, with so free a communication, it was clear that the fluid would pass into the bladder and be discharged per urethram. I therefore gave my advice for the latter operation, but as it was novel and of such gravity, the lady and her friends very naturally wished to have the advice of some London authority. They accordingly went to London, and consulted Mr. Cæsar Hawkins and Dr. R. Lee, who, after very careful consideration, concurred in the advice I had given, and sent her back to me.

On November, 25th, 1858, assisted by Drs. Beatty, Sawyer, and Collis, I proceeded to perform the operation, placing the patient in the position for lithotomy, and giving chloroform. Then, separating the vaginal parietes by dilators, I pared a strip off all round the inner edge of the os uteri, and inserted four silver-wire ligatures, which were maintained *in situ* by Bozeman's button. The operation occupied an hour, but its conclusion was so far satisfactory that not a drop of urine escaped into the vagina. Opium was given to constipate the bowels; a catheter was introduced and left, and the patient placed in bed. The catheter was changed every day, and the vagina syringed with cold water. Up to the time we removed the button-shield, on the eighth day, not a drop of urine had escaped. On the thirteenth day I withdrew the ligatures, and examined with the speculum, and found, to my disappointment, that although not a third of its former size, there was a portion of the os uteri not closed, through which I saw urine escaping.

I still kept the patient in bed a day or two, and an attack of erysipelas lengthened the time to a week, but I told her that I did not see any use in continuing the catheter. We then contemplated a second operation, but upon inquiry about the escape of urine, after a day or two, I found, to my surprise and gratification, that none escaped unless the bladder was much distended;

that if she passed water per urethram, which she could do very well, every three hours, not a drop came the other way, and this improvement continued until she left this country, three weeks after the operation. Within a few days I have heard from the lady, and I find that the relief still continues.

What may be the exact state of the parts I do not know, for I was too much afraid of disturbing such a salutary state of affairs to investigate; but though I do not bring it forward as a case of absolute cure, I do think it not only justifies the operation, but affords the greatest hope of future success in similar cases from a like operation.

Until a few weeks ago I thought this was the only example of an attempt to close the os uteri for the cure of a vesico-uterine fistula, but I read in the report of Dr. Simon that he had performed the same operation with perfect success.

Art. 163.—*On the employment of Pessaries, with the description of a new instrument.* By Dr. E. Noeggerath, of New York.

(*New York Journal of Medicine*, Sept., 1859.)

That pessaries have, by mismanagement and their application to inappropriate cases, frequently done mischief and complicated the evils they were intended to counteract, is a fact which I believe few physicians who have seen much practice will deny; at the same time it is no less generally admitted that there are cases in which the pessary is not only of service, but actually necessary to a cure. Dr. Noeggerath is decidedly of this opinion, and before describing the new instrument recommended by him, he thus points out the cases which he considers as imperatively demanding the use of the pessary:

"1st. Prolapsus in that portion of society, where it is most commonly met with, viz., in poor women, who have neither time nor means to undergo a complicated course of medical treatment.

"2d. Prolapsus of a very long standing, where the causes may be removed by careful management, while their effect upon the falling of the womb resists every other means.

"3d. Those cases of prolapsus, not unfrequently seen in otherwise strong and healthy women, where the most thorough examination is unable to detect anything apart from the normal state besides a relaxation of all the apparatus supporting the womb. Admitting that a pessary is required in a given case, the important question occurs, what kind is to be chosen? The requisites of a good instrument are as follow: first, it must retain the womb in or near its natural position; second, it must neither irritate the womb nor the vagina; third, it must not interfere with the patient's moving round, sitting, or the excretion of the urine or fæces; fourth, it must be composed of a substance which resists the corrosive influence of the secretions from the genitals; fifth, it must be so constructed as to be easily introduced and removed by the patient herself; sixth, it must be as cheap as possible."

Our space will only admit of a brief account of the nature of the instrument:

"Dr. Zwank, of Hamburg, published an instrument in 1853, which

he called a hysterophor. It consists of two ovoid thin pieces of metal, covered with india-rubber, or of wood, connected on one end by a joint; in the neighbourhood of this joint, on the external sides of the wings, is a metallic pin on each side, two inches long, which can be screwed together at the lower end. (Figures are given in the original paper, to assist the reader in comprehending the mechanism of the instrument.) In applying the instrument, the wings are approached as much as possible, and introduced so that its convex portion is turned toward the sacrum and pushed upward as high as possible, toward the anterior portion of the laquear vaginæ, in front of the cervix uteri. Afterwards the lower ends of the metallic handles are compressed, and fastened by the screw. In this position the instrument is retained by itself.

"About the same time Dr. Schilling, of Munich, invented quite a similar instrument to that of Zwank, the only difference being that the movement of the wings is effected and can be regulated by the screw at the lower end."

The author states that these instruments are superior in every way to any yet invented, but still they have some disadvantages owing to the substance of which they are composed. "The greater number of them as now in use being covered with a coat of vulcanized india-rubber, the discharges of the vagina destroy it in a very short time. After this has been done, the metallic portions begin to rust and decay, thus irritating the vulva; the furrows of the screw at the lower end begin to crust, or the screw, if turned too firmly, cannot be untwisted. In order to avoid these inconveniences, Dr. Eulenburgh, of Coblenz, modified Dr. Zwank's pessary, and described his instrument in a short thesis in 1857. It is made entirely of boxwood, and its wings are a little differently shaped, viz., they are slightly curved downward at both ends, so that the lower side forms a concave surface. In consequence of this shape, the lateral branches closely adapt themselves to the inner surface of the descending ramus of the pubis, thus presenting a kind of hook, which gives a strong hold to the instrument when in the vagina. Both wings move in the centre part by two joints, thus leaving a hole in the middle, through which the secretions of the vagina are allowed to escape. Instead of the screw, Dr. Eulenburgh perfected the opening and shutting of the wings, by means of an elastic india-rubber ring, which runs in a channel around the body of the hysterophor immediately below the two joints. As every particle of metal is avoided (except the small pin running through the joint), and as the boxwood resists more than any other substance the corrosive influence of the vaginal discharges, it is lighter, will keep longer, and will cause less irritation than the other instruments.

"For my own part, I avoid the use of pessaries as much as possible. But I have under my care a number of cases, in which a pessary was the only remediable means justifiable. I have tried a great variety of them, and have now come to the conclusion that Zwank's (or Eulenburgh's) hysterophor answers better the requisites of a good pessary than any other."

ART. 164.—*On Peritonitis in relation to Uterine Pathology.* By Dr. TILT, Senior Physician to the Farringdon General Dispensary, &c.

(*Lancet*, Aug. 6 and 27, and Sept. 10, 1859.)

In these papers, Dr. Tilt dilates with much clearness and ability upon the history, the frequency, the symptoms and diagnosis, the march and terminations, and the treatment of inflammatory lesions on the peritoneum of the female pelvis. Speaking upon the march and termination of the complaint, he says:

"I have described a first attack of pelvi-peritonitis, which is generally cured in healthy subjects from the eighth to the fourteenth day, but will be protracted in the sickly, and is in all cases very liable to relapse at the ensuing menstrual periods. These relapses are evidently caused by the active turgescence of the abundant blood-vessels which subserve the menstrual function. Indeed, these relapses do not occur when menstruation has been permanently checked by phthisis or any other constitutional complaint. This liability to relapse had been already claimed as a character of peri-uterine phlegmon by Mr. Gosselin; but it is a singular property to ascribe to phlegmonous inflammation, whereas, in connexion with peritonitis, the occurrence of frequent relapses harmonizes with all we know of chronic inflammation of serous membranes, and of their liability to frequent inflammatory exacerbations.

"Repeated attacks of pelvi-peritonitis may cause the neighbouring organs to adhere, so as to form solid tumours, distinctly felt in the hypogastric region, the diagnosis of which is sometimes exceedingly obscure. I remember hearing it stated by Grisolle, that he had often had sent to him as instances of iliac abscess, cases in which there were large accumulations of false membranes in the iliac regions. Sometimes the tumour thus formed is sufficiently large and central to have been mistaken for an ovarian tumour, and gastrotomy has even been performed under such circumstances. When a digital examination is made at this stage of the complaint, the peri-uterine swelling is no longer uniformly semi-elastic; it has become irregular and knotty, owing to the absorption of the serum and the condensation of irregularly deposited false membranes. It may happen, particularly after parturition, that the unhealthy state of the blood may change the character of the peritoneal outpouring. Instead of being sero-adhesive, it becomes purulent, and the pus accumulated in the recto-vaginal pouch finds vent by small openings into the vagina or the rectum, a circumstance which does not much alter the prognosis, unless the patient's health is seriously impaired.

"Pelvi-peritonitis seldom leads to a fatal termination; but if it be long protracted, there will ensue a state of anæmia, and a general break-down of health. This condition may be hastened by floodings, or by long-persisting uterine inflammation and discharges; and, as might be anticipated, an endless variety of nervous and hysterical symptoms will then make their appearance. These are the worst consequences of pelvi-peritonitis, but the large majority of patients

recover without experiencing, in after-life, any inconvenience. This is evident from the fact of our so frequently finding, at post-mortem examinations, pelvic bands and adhesions which had not in any way interfered with health. Those, however, in whom repeated attacks of pelvi-peritonitis have developed solid unyielding bands, awkwardly attached, remain ever liable to serious accidents. Thus it has been affirmed by Rokitansky and others, that women were subject more than men to incarceration of the bowels, owing to their becoming obstructed by one of those strangulating bridles, as in a case related by Dr. Renaud, of Manchester; and Dr. Brinton has lately stated, in the admirable lectures delivered at the Royal College of Physicians, that intestinal obstruction by bands and adhesions on the diverticula or the peritoneum external to the bowel, might be estimated at $31\frac{1}{2}$ per cent.

Displacements of the womb are much more frequently caused by pelvi-peritonitis than is generally admitted, and it is obviously absurd to treat such cases by intra-uterine pessaries. Thus I have found the womb drawn up by bands, uniting its fundus to the anterior walls of the abdomen. Huguier has found latero-flexions of the womb to be caused by pelvic adhesions; and if, as Dr. Oldham has correctly observed, dysmenorrhœa induces retroversion, it is sometimes owing to peri-uterine inflammation, and subsequent adhesions. Struck by the frequency of adhesions when the womb is in a state of flexion, Virchow has even supposed that the uterus was bent upon itself by the bands originating in peritonitis; but I rather look upon them, with Scanzoni, as complications determined by the prolonged flexion of the womb. In some cases, false membranes so bind down the womb as to render permanent its flexion, and any attempt to correct it dangerous. It is said that partial atrophy of the womb has been likewise caused by the pressure of voluminous false membranes. In like manner, if part of an ovarian tumour becomes inflamed, it often brings on local peritonitis in the corresponding portion of the peritoneum, thus producing those adhesions so difficult to detect, and which have so frequently prevented the removal of ovarian tumours after the operation of gastrotomy. Cancer of the womb is generally associated with pelvi-peritonitis, by which it becomes more or less immovably fixed.

Again, there is no more frequent cause of sterility than pelvi-peritonitis. This has been long well known to the profession, and in a paper which I had the honour to read before the Westminster Society, I explained how peritonitis caused sterility sometimes by thickening the serous covering of the ovaries, and so embedding them in false membranes, that it became difficult, or impossible, for the ripe follicle to burst, and let fall the germ. Sterility, however, still more frequently depends on the occlusion of the distal ends of the oviducts, or on the permanent adhesion to some portion of the pelvis, so that the germ cannot be conveyed to the womb. In this way many women become sterile who are not so reputed, because they have had one or more children previous to an attack of pelvi-peritonitis. Sometimes the womb is so tightly bound down by adhesions, that its development after impregnation is prevented, and abortion ensues as often as conception takes place.

ART. 166.—*A modified operation for Vesico-vaginal Fistula.* By Dr. COGHILL, Demonstrator of Anatomy in the University of Glasgow.

(*Lancet*, May 7, 1859.)

In this case the difficulty presented by the protrusion of the bladder was overcome, and the process of paring the margin of the fistula rendered quite easy by using spatulæ of steel ribbon, about half an inch broad, and extemporised for the occasion. Annealed iron wire was passed by means of Simpson's tubular needle, and the ends of each suture were then passed through the eyes of the *twister* (an ingenious contrivance first proposed by Dr. Coghill), and the suture fixed by giving two or three turns to this instrument, The method of operating in question resembles in principle the original operation of Dr. Simpson, rejecting, however, the clamps or silver bars to which the wires were fastened on each side of the wound, as in the ordinary quilled suture. Dr. Coghill, indeed, dispensing with all clamps, bars, buttons, or circular splints, merely brings the edges of the wound into contact by a wire suture, and keeps them in contact by twisting the ends of the wire upon themselves. Dr. Coghill, moreover, only uses one simple convex-bladed knife in the cutting part of the operation, so that he greatly simplifies matters. The case was perfectly successful, the sutures being removed on the ninth day.

REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

July—December, 1859.

The intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON PRACTICAL MEDICINE.

Lectures on Pathological Anatomy, delivered at Guy's Hospital. By Samuel Wilks, M.D., F.R.C.P., Assistant-Physician to the Hospital. (8vo, London: Longmans, pp. 480, 1859.)

Of all the branches of science connected with medicine, morbid anatomy is the one which of late years has at once received the greatest amount of attention and most amply repaid the labour bestowed upon it. Dr. Wilks, moreover, deserves to be most honorably mentioned among the chief of those who have laboured most assiduously and successfully in this department of knowledge. For several years he has had at command all the resources of one of the largest hospitals in London, and, in addition to the direct charge of a splendid pathological collection, he has himself recorded the results of between 2000 and 3000 post-mortem examinations. During the greater part of this time, also, he has had the opportunity, as a lecturer, of teaching himself while teaching others, and in this way he has acquired (what is not easily acquired) the power of thinking definitely, of seeing accurately, and of describing clearly and succinctly. In a word, the lectures themselves, as we might expect from the qualifications of the lecturer, may be fairly taken as representing the actual state of our present knowledge in the subject of pathology, and we cordially join in the praises which have been awarded to them on all sides.

A few extracts on subjects of special interest will serve to show the style and character of the book.

In treating of tumours of bone, those now recognised as "myeloid" are thus described:

"These tumours, as far as our present experience reaches, spring up in the interior of bone, and consist of similar elements to those which constitute the medulla in the fœtus, these elementary cells being again produced under a morbid process in adult life from the tumours seen in these parts. As the growths are peculiar to bone-formation, they do not, I think, occur apart from the human skeleton, and do not, when simple, recur, or become propagated. (A case is given in a note, however, in which, after amputation for myeloid disease of fibula, the disease recurred in the stump, in the shape of perfect

myeloid tumours, and after death perfect and simple myeloid tumours were found in his lungs). The disease consists in the production, within the interior of the end of a bone, of a quantity of soft medullary matter, consisting of a structure no longer met with in any of the tissues of the adult, but, from constituting the fœtal marrow, is termed *myeloid.* From some cause, may be an injury, an undue action is excited at the end of a bone, and a production of these peculiar cells takes place. Beginning in the centre, the growth continues until the shell of the bone is reached; this is gradually absorbed, and at length the periosteum is pushed before it, and a tumour is formed; the latter at the same time becoming thickened and forming its investing membrane. As this process occurs near a joint, the disease reaches as far as this, and then ceases, and thus generally the cartilages are found perfect on the end of the tumour; on the opposite side the jagged end of the bone is seen entering its middle, and connected with it by the periosteum, which passes off the shaft to form the sac. When the tumour is examined, after recourse has been had to amputation, it is seen to be quite round, and occupies the end of the bone, consisting of myeloid matter inclosed in a membranous sac, continuous with periosteum, the cartilage and joint being perfect on one side, and the jagged end of the shaft entering the tumour at the other. If the tumour should be allowed to grow very large, the sac might give way and the joint be involved, but this is rarely seen. There is a disposition in all cases for the sac to become osseous, or even form a complete bony case, as is seen in this myeloid tumour of scapula. In some the myeloid matter is quite soft, so that if taken out a mere sac is left, as seen in several specimens. In others processes of fibre proceed from the periosteum, split up into a reticulum, constituting a fibro-myeloid, while in others cysts are present, and these may be called cysto-myeloid. The material itself is quite peculiar, and can scarcely, when once seen, fail to be again recognised. It is soft and dry, not at all fibrous, but breaks up like cancer, at the same time is dry and emits no juice, being of the consistence and general appearance of coloured blanc-mange; this colour is very peculiar, and gives the tumour a red hue, hence the spleen-like tumours of older writers. It is somewhat like that of plum-juice, and is different from any other coloured tissue in the body. There is often some blood extravasated in the tumour, which may increase the redness, but when this is removed the myeloid matter itself is seen to have this morone hue. The microscope can immediately detect the peculiarity of the structure, exhibiting very large cells, which have branching processes proceeding outwards in all directions, and which apparently join one another. The cells are of various sizes, some of the largest holding as many as fifty nuclei or more, of an oval shape, and containing nucleoli" (p. 87).

The remarks upon a subject which has recently attracted considerable attention, will be of especial interest to those of our readers who live in aguish districts.

"*Pigmental changes in the spleen and other organs as a result of intermittent fever.*—I may take this opportunity of mentioning to you the very remarkable observations made by some Continental pathologists in reference to this subject.

"Vogel has shown that in persons who have died of intermittent fever the spleen has been found of a dark colour, from the presence of pigment, and that the blood has contained similar colouring matter. It has been shown also that other organs may be similarly affected, and Frerichs, who has lately been in London, informed me that, having paid especial attention to the subject, he has found all organs of the body discoloured in those who have died of intermittent fever; indeed, wherever the pigment circulates there it will collect in the capillaries, and thus the brain, kidneys, liver, &c., may be found containing it. I mention the subject under spleen because this organ is intimately connected with intermittent fever, and we have long recognised the existence of anæmia and diseased states of the blood in splenic disease; but at the same time I do not know that this pigment-deposit is due to any derangement of the spleen, or whether it may not arise from some primary affection of the blood, though probably the former is the case. Here is a drawing from Bright's 'Medical Reports,' which undoubtedly represents this affection. The case is here described as J. C—, an old man, who, accompanied by his wife, set out from Horncastle, in Lincolnshire (an aguish locality), in August, 1829, for London, and, having walked all the way, fell ill immediately on his arrival, and was brought to the hospital in a dying state, apparently with fever. On post-mortem examination the brain was found as here represented, having its surface or cineritious structure of the colour of blacklead, but the section showing the medullary part unaffected, except the puncta vasculosa, which were also of this dark colour. Within, the corpora striata were found of the same blackish colour, and the vessels were filled with dark blood. The spleen was also of a dark hue. The wife's brain and other organs were also dark, though less so than those of her husband."

Who will not read the following paragraph with interest, and feel the truth of the lesson it points out?

"The decease of Dr. Bright since the above was written compels me to remind the student of the merits of this great physician, which serve for the imitation of us all. I allude to his truthfulness, and *his publication of all the facts relative to the cases which came before him, even without knowing their import, or that they contained any discovery.* This he did in his account of renal disease, subsequently in describing pancreatic disease, and now, *after thirty years*, we can make use of one of his cases, *of the pathology of which he was ignorant, but of which he gave all known particulars, even to the place whence the patient came, which is now the most important part of the history,* and yet, probably, been read by hundreds of persons without any conception that the mention of such a fact could bear on the nature of the case" (p. 345).

The second part of the book is devoted to the brief consideration of the "Association of morbid conditions," with a view to showing how the various structural changes are combined in the body, "for," as the author remarks, "you must be aware that a simple demonstration of the morbid anatomy of particular parts is only one step towards a knowledge of pathology; but a grouping together of the various diseased structures, such as are found naturally associated, raises us

a step considerably higher—so that I believe a thorough acquaintance with the various morbid processes, in any particular case, would lead us very close upon its true pathology." The indications given by the appearance of the body in deaths from different causes are then described, and as an illustration we may quote an instance of what may be called "*post-mortem diagnosis*," the clearness of which must strike the most inattentive reader.

"A lad came one day for admission, and died in the taking-in room. Before hearing from his friends we proceeded to examine the body. On percussing the chest, the left side was found tympanitic, indicating a pneumo-thorax, but then the body was not wasted sufficiently for phthisis, and this sign suggested, therefore, an acute disease of the lung, which had ended in rupture of the tissue; as this, however, does not occur except in lobular abscess from pyæmia, a local cause was looked for as a source of purulent infection, when all that we discovered was a discharge from the ear, and on placing the fingers on the neck, a general swelling was found, and an induration of the jugular vein; it became then tolerably clear that a chronic ostitis, with diseased temporal bone, existed; that the lateral sinus had become involved; that phlebitis had extended down the jugular vein to the heart, and so the lung had been affected with abscesses, one of which had burst and caused the boy's death by pneumo-thorax. *On opening the body the morbid conditions were found true in every detail, and the whole history was exactly as suspected*" (p. 433).

The chapter on tumours, &c., will probably be criticised more freely than any other part, but for clearness and simplicity we think there can be only one opinion respecting it.

"These terms (tumours, new growths, and adventitious deposits) apply to different physical and pathological conditions, but yet can scarcely be separated from one another; a tumour denotes any swelling, though it is generally intended to apply merely to formations of new tissue, and hence the more recent appellation, new growth; while, if this new material be diffused through an organ, the term is no longer applicable, and some epithet denoting the change or degeneration of the structure is adopted instead; it must be remembered, however, that it is not always easy to draw a line between these, and that cancer, tubercle, fat, fibrous tissue, &c., may be diffused and isolated in the same case."

"These varieties (referring to a list of names for tumours, &c.), do not so much contain in themselves peculiarities, as they differ according to the circumstances of their growth, and therefore the great object of the pathologist is to discover what interpretation to put upon the various forms, to discover what are the essential ingredients, what the secondary, or how much they are dependent on a constitutional and how much upon a purely local cause. In the first place, all such adventitious products are morbid; for, while the organism is healthy, all the nutrient fluids of the body are employed in maintaining the integrity of the tissues, which, however complex they may be, are constantly being renewed; let there be an injury to a part by which a breach of surface occurs, a plasma is thrown out to heal it; but then the affinity is in great measure lost between this

fluid and the original structure, for although the disposition remains to repair the breach by producing a material like that from which the blastema has issued, yet this can only be accomplished within certain limits; thus visceral tissue is not reproduced. When, then, a blastema proceeds from any part, whether the cause be purely a local one from injury, or have altogether a constitutional origin, its tendency in the soft tissues is merely to develop into the most elementary forms; but even within these limits the greater the tendency to develop and not to remain as a simple structure, the nearer the approximation to a healthy state, and the more innocent the character of the growth. Thus, in most of the softer structures of the body the main constituents of adventitious deposits are cells and fibres of various forms and combinations; the purely cell-structure being analogous to cancer, and malignant, while the fibrous shows a tendency less malignant. Supposing now, that, owing to some morbid condition of a part, a blastema is thrown out which shall fibrillate, a *simple fibrous tumour* is produced. . . Now suppose, again, this plasma should form nuclei and cells, and these should rapidly be produced and have no tendency to fibrillate, a large mass of useless structure is seen which can receive no other name than cancer. *These cells are not, I believe, peculiar, but are simply embryonic cells, which are constantly being produced without any object, and therefore display a vicious or malignant condition of system. I do not think they can be distinguished from many healthy secreting-cells, and that the microscope is insufficient to declare their nature from simple inspection;* but the fact of a tumour being composed of these rapidly growing elements is sufficient to indicate its malignity. Now, for a third time, suppose an intermediate condition—a plasma which forms cells having a disposition to change into fibre, a tumour is produced which is seen to be composed of rapidly growing nucleated fibres. It was an examination of such tumours by the microscope that threw discredit on the instrument when it first came into use, for it could only give a doubtful answer about them; this, however, showed that growths were being examined which were intermediate between cancers and innocent tumours, and were, in fact, semi-malignant—they are styled recurrent or malignant fibroid.

"These you may regard as the three great divisions of tumours—innocent, malignant, and semi-malignant; but they pass into one another, and various grades of them, no doubt, exist. Thus cancer, or the cell-growth, for instance, is divided into scirrhous and medullary; the former being hard, and the latter soft, or resembling a piece of brain, whence its name encephaloid—being a vascular, soft structure, giving out a milky juice when squeezed. These two forms do exist, but at the same time the hardness and softness of a cancer depends very much upon the texture of the organ in which the adventitious deposit takes place, and thus the hard cancer of the breast is more dependent on the natural fibrous texture of the gland than upon any hardness inherent in itself. The most rapidly growing cancer is the *medullary*, and this, when of the acute form, is soft, and often contains nothing more than nuclei—nuclei being probably formed before cells. . . . If the cells should have a

tendency to sprout out, and if the plasma fibrillates into a firm matrix, the tumour is necessarily harder, and a *scirrhous* cancer is produced; this is of slower formation and less malignant than the medullary. The fibrous and fibro-nucleated tumours are innocent, but the recurrent fibroid are of a semi-malignant character. They were formerly classed with the cancers, but they are found merely to recur at the same spot after removal, unless, indeed, they have existed for a long time, when they may be propagated throughout the body like a cancer, and are therefore sometimes styled malignant fibroid. In appearance they resemble somewhat the cancers, but are firmer, and give out only a serous instead of a milky juice, have a fibrous structure when torn, and display nucleated fibre by the microscope. I take these three forms of tumours as the types upon which all others are formed—the innocent and malignant at the two ends, and semi-malignant between them. All others, I think, owe their character to a local cause which modifies their growth, &c." (pp. 467-8).

These extracts will be enough to show that the work before us will take rank as a standard authority on the subject of pathology.

Gulstonian Lectures on Fever and Inflammation, delivered before the Royal College of Physicians of London. By WILLIAM ADDISON, M.D., F.R.S., Fellow of the College. ('British Med. Journal,' April, May, and June, 1859.)

The chief points of the doctrine set forth in these lectures are—

That the fluid of the blood has a pathology distinct from that of the corpuscles; and

That forms of inflammation, or of local poisoning, without fever, make their appearance when the disorder is confined to the fluid of the blood, and that forms of fever are produced only when the corpuscles are disordered.

Numerous and various substances, Dr. W. Addison endeavours to show, may circulate through the body dissolved in the fluid of the blood, and the cellular elements of the body (including the corpuscles of the blood) have various affinities, and oppose various degrees of resistance to injurious matter. If from distemperature of the fluid of the blood the common tissue of the body be first disturbed, forms of inflammation first arise; if some special parenchyma be disturbed, the phenomena are those of local poisoning, delirium, coma, diuresis, purging, sweating, salivation, &c.; if the corpuscles of the blood be primarily or secondarily disordered, fever is the result.

If these views be established, Dr. W. Addison will have contributed in no small degree towards an interpretation of the various phenomena of fever and inflammation. At the present moment, however, the author is at the beginning rather than at the end of his labours, and we have only to direct the attention of our readers to what is going on, and to express our sympathy in the work and our hope as to its results.

On the simultaneous existence of two or more Diseases originating in specific morbid Poisons. By Dr. Murchison, Assistant-Physician to King's College Hospital. ('Med.-Chir. Rev.,' July, 1859.)

There is a prevalent belief, originating from no less an authority than John Hunter, that no two of those febrile diseases which are thought to depend upon the introduction of a morbid poison into the blood can exist in the system at one and the same time. At different times, however, many isolated instances, conclusive as to the incorrectness of this belief, have been recorded in the periodical literature of the day; and now Dr. Murchison does the profession the good service of collecting these instances together and of adding some additional facts observed by himself. The paper in question is arranged in sections, showing the possible coexistence of variola and scarlatina, of variola and rubeola, of variola and roseola or erysipelas, of variola and pertussis, of variola and varicella, of variola and vaccinia, of vaccinia and rubeola, of vaccinia and pertussis, of vaccinia and varicella, of rubeola and pertussis, of variola, rubeola, and pertussis, of scarlatina and rubeola, of scarlatina and typhoid or pythogenic fever, of typhus and pythogenic fever. Dr. Murchison's remarks on the possible coexistence of the two last-named affections are of much importance.

"The doctrine of the compatibility of two of the exanthemata has an important bearing upon that of the non-identity of typhus and pythogenic fever. They who maintain that the poisons of the two fevers are identical, have appealed triumphantly to certain cases in which they have observed the eruptions of the two fevers to coexist. Now, allowing for a moment that the facts in all these cases have been correct, the conclusions which have been drawn are based upon a doctrine which is utterly fallacious. The coexistence of two eruptions no more implies an identity of the two diseases, than it does in the case of variola and scarlet fever, or of scarlet and pythogenic fever. But there can be little doubt that, in the majority of cases, the facts themselves, from the manner in which they have been described, must be viewed with no small distrust. On few subjects does so much confusion prevail in the profession as with regard to the eruptions of continued fevers. A very common mistake is to imagine that petechiæ constitute the characteristic eruption of typhus, a mistake which has been strengthened by 'petechial fever' being one of the appellations applied to the disease; and it has been argued, from a patient presenting both 'rose spots' and 'petechiæ,' that the eruptions of pythogenic fever and typhus have coexisted. But petechiæ do not constitute the characteristic eruption of typhus; and they are met with in the course of pythogenic fever, in the same way as they show themselves in the course of variola, scarlatina, and many other affections. All they who have had much practical experience in studying both typhus and pathogenic fever, will admit that it is excessively rare to find the *measly eruption* characteristic of the one, coexisting with the *rose spots* characteristic of the other. In my essay upon the "Etiology of continued Fevers," published in the

'Medico-Chirurgical Transactions' (vol. xli, p. 275), I expressed an opinion that such a coexistence was possible; but I maintained then, as I do now, that no argument could be based upon such a coexistence as to the identity of the typhus and pythogenic poison, any more than we should employ a similar argument to show that variola and scarlet fever, or scarlet fever and pythogenic fever, were one and the same. I shall now proceed to detail the facts which testify to the possibility of typhus and pythogenic fever coexisting.

"Such facts might be naturally looked for under circumstances in which a patient labouring under the one disease has been exposed to the contagion of the other, as, for example, in the London Fever Hospital. When the doubtfully contagious character of pythogenic fever (already alluded to) is remembered, it will not be wondered at that patients admitted with typhus have seldom contracted the former disease. During a period of ten years I have only been able to find the notes of two such cases. One was that of a female, aged twenty-one, who, with seven others of the same family, was admitted with well-marked typhus, and who, in the third week of convalescence, had an attack of pythogenic fever, the symptoms of which, however, were mild and not very characteristic. The second case will be shortly alluded to. On the other hand, it has been by no means rare for patients admitted with pythogenic fever to contract typhus during their stay in hospital. But, in most cases, this has been in the fifth to eighth week of convalescence from the first fever, and two or three weeks after the patients have been removed to the convalescent ward, a circumstance which is explained by the patients in the convalescent ward being thrown into more intimate relations with one another, and by typhus being avowedly more contagious during convalescence than during the height of the disease. In the following instances, however, the eruptions and other symptoms of the two diseases were almost contemporaneous.

"Illustration XLIX.—A female, aged twenty-two, had an attack of pythogenic fever, which was attributed to the putrid emanations from a bad drain. She was admitted into the London Fever Hospital. The primary attack lasted three weeks. After a fortnight she had a relapse, with a return of the 'rose spots,' and the day after this there was a subcutaneous 'typhus mottling,' along with drowsiness, heaviness, and other symptoms of typhus.

"Illustration L.—A male, aged twenty-five, was admitted with well-marked pythogenic fever. On the twenty-seventh day there was a great aggravation of the symptoms, with much headache and stupor, and in addition to several rose-coloured spots there was a distinct subcutaneous mottling. The diarrhœa still persisted. Four days later the subcutaneous mottling had become developed into a well-marked typhus rash. The patient recovered.

"Illustration LI.—A female, aged twenty-seven, was admitted on the third day of an attack of typhus. The rash began to fade about the fifteenth day, but there was no abatement of the general febrile symptoms. On the eighteenth day there was watery diarrhœa, tympanitic abdomen, and several rose spots. The latter symptoms continued for about a fortnight, after which the patient gradually recovered.

"It not unfrequently happens that patients are exposed to the poisons of both typhus and pythogenic fever before their admission into a hospital. In my researches, elsewhere published, I have endeavoured to show that the poison of pythogenic fever is generated in the emanations from decaying animal matter, and that of typhus by the respiration of an atmosphere charged with the exhalations of living bodies, although in the majority of cases the latter disease is propagated by contagion. Now, if a certain poison can generate one group of symptoms, and another poison generate another, surely it is but reasonable to expect that a combination of the two poisons may give rise to a morbid condition of an intermediate character, without its being necessary to conclude from the existence of such a hybrid affection that the first two morbid conditions have been merely different manifestations of the same poison.

"The three following instances were made the subject of repeated and most careful observations by myself:

"Illustration LII.—In December, 1857, a girl, aged sixteen, was admitted into the Fever Hospital from 17, Windmill Row, Lambeth; ill a week. Her body was covered with an unmistakeable mulberry (typhus) rash, and she presented all the usual symptoms of typhus—dry, brown tongue; confined bowels; heavy, confused expression; small pupils; and low, wandering delirium. The case attracted particular notice, as typhus was at that time very uncommon. Two days after the symptoms underwent a complete change. The mulberry rash (which was certainly not the scarlet rash which occasionally precedes the eruption of pythogenic fever) faded, and was succeeded by rose spots, which came out in successive crops for more than a week, and were accompanied by diarrhœa and abdominal tenderness. The tongue became moist and red; the pupils dilated; and the drowsiness and wandering vanished. The girl was a hawker; for some weeks had been very destitute, and a fortnight before she had slept for two or three nights at another house, in the same bed with a girl who had 'fever.' This second girl, with her mother and sisters, was admitted into the Lambeth Workhouse; but the father and brother were admitted into the Fever Hospital with well-marked typhus. On the other hand, Dr. Odling, the officer of health for Lambeth, informed me that the courtway in front of No. 17, Windmill Row, was badly paved and badly drained; and that, although the cesspools in the house had been done away with, the habits of the inmates had rendered the privy arrangements as insalubrious as before. This girl was therefore exposed both to the contagion of typhus, and to the causes which there is reason to believe generate pythogenic fever.

"Illustration LIII.—A man, aged twenty, a street hawker, was admitted into the Fever Hospital, October 17th, 1858, from 7, Feathers' Court, Drury Lane. This man had diarrhœa, and the characteristic tongue of pythogenic fever; but on the other hand (what is more peculiar to typhus), he had delirium coming on so early as the third day. From the eighth up to the twenty-second day he had distinct 'rose spots' coming out in successive crops; and, in addition, there was from the seventh to the eleventh day a faint mottling on the arms and trunk, precisely similar to the eruption of typhus. This

man's brother and sister were both laid up at home with fever. Both had diarrhœa, and in both the body was covered with an eruption, compared by the mother to that of measles. Now, pythogenic fever was at the time very prevalent in London, so that it was not to be wondered at if the patients should be exposed to its exciting causes; but typhus was scarcely to be met with, and it became interesting to determine whether these patients had been exposed to the causes which are known to generate it. In the first place, it was ascertained that they were very destitute, and destitution is known to be the great predisposing cause of typhus; and secondly, the room in which they lived was overcrowded—five adults sleeping in a room seventeen feet square and eight feet high, with one door and one window, so that, making no allowance for furniture, each individual had only about three hundred cubic feet of space. There were no means of ventilation. The single window was seldom or never opened.

"Illustration LIV.—A girl, aged six, was admitted into the Fever Hospital, September 13th, 1858, from 3, Horse-shoe Court, Cow Cross, Holborn. On the eighth day of her illness rose spots were observed, perfectly characteristic, lasting for a few days and then succeeded by others up to the eighteenth day. On the ninth day, and lasting for four days, in addition to these rose spots, there was a distinct subcutaneous mottling, not disappearing on pressure, and precisely resembling the eruption of typhus. The general symptoms more resembled those of typhus than of pythogenic fever. There was no diarrhœa, and throughout there was much tendency to stupor and slight delirium. Three other children from the same family were admitted about the same time into St. Bartholomew's. All of them, according to the mother, had a rash resembling that of measles; but all had also diarrhœa, and in one boy rose spots were noted during his stay in St. Bartholomew's. Pythogenic fever at the time was very prevalent in London. Typhus was almost unknown; yet in the house from which these patients came the causes known to generate typhus existed in a marked degree. The house itself was situated at the top of a closed court, and the room in which the father, mother, and five children slept was at the top of a narrow stair in this house, and measured fourteen feet in length, thirteen and a half in breadth, and seven and a half in height, a space which, even making no allowance for furniture, allowed only two hundred cubic feet of air to each individual.

"Lastly, it seems not improbable that a coexistence of two different diseases may have accounted for the anomalous symptoms observed in the two following instances:

"Illustration LV.—An outbreak of fever occurred in autumn, 1857, in Dudley Street, Paddington, in which I am assured by Dr. Sanderson* that there were some cases which presented the characters of both typhus and pythogenic fever, including the presence of the two eruptions. I have elsewhere shown that in Paddington there are various causes to account for the generation of pythogenic fever,

* Dr. Sanderson has had ample opportunities of studying the two fevers at the London Fever Hospital.

and that typhus is there extremely rare. It becomes interesting, then, to ascertain under what circumstaaces typhus, or something resembling it, may there originate. Now, in the houses in which these 'mixed cases' occurred the two causes which I have supposed to generate typhus and pythogenic fever were present in a marked degree. First, the residents were principally dustwomen, and the house were daily stocked with selections from the street-sweepings of the metropolis, such as old grease-pots, &c., materials sufficiently prone to decomposition in hot weather. But, secondly, these two houses were overcrowded to such a degree that compulsory measures had to be adopted to diminish the number of inmates. Cases of fever occurred at the same time in other houses of the same street, which were not overcrowded; but these were pure examples of pythogenic fever.

"Secondly, Illustration LVI.—M. Landouzy* has given an account of a remarkable fever which prevailed at the gaol at Rheims, in the autumn of 1840. Many of the symptoms during life, including the eruption, were those of typhus; but the intestines after death presented the lesions characteristic of pythogenic fever. Now, from the locality and the season of the year, one would have expected the latter; and in addition to these causes, we are informed that there was a most diagreeable odour in the gaol (proceeding from the grease of the woollen fabrics manufactured by the prisoners?). That the fever was really pythogenic fever is proved by the lesions found after death. On the other hand, a cause was not wanting to account for the symptoms of typhus during life; and, it must be remembered, that a copious mulberry rash would entirely mask a few rose-coloured spots, even if these were present. The circumstance to which the fever was mainly attributed was the overcrowding of the prisoners. The number which the gaol was calculated to hold was from one hundred and thirty to one hundred and fifty; but a month or two previous to the outbreak of the fever this had been raised to one hundred and ninety.

"The illustrations cited in this essay might have been greatly multiplied; and it might have been shown that the paludal poison, and the poisons of syphilis, the plague, cholera, and influenza, are compatible not only with one another, but also with the poisons of the diseases already enumerated. Enough, however, I trust, has been done to prove that the doctrine of the incompatibility of two or more contagious diseases is erroneous; and consequently that, upon the mere occasional coexistence of the peculiar eruptions of typhus and pythogenic fever, no argument can be based as to the identity of the poisons of these two diseases."

* Archives Gén. de Méd., troisième série, vol. xiii, p. 7.

On the nature and treatment of Gout and Rheumatic Gout. By A. Baring Garrod, m.d., f.r.s. f.r.c.p., Physician to University College Hospital, and Professor of Materia Medica and Clinical Medicine in University College, &c. (Post 8vo, London: Walton and Maberley, pp. 601, 1859.)

For the last twelve years, as is well known to many, Dr. Garrod has been patiently and successfully engaged in investigating the pathology and treatment of gout, and many are the important facts which we owe to his industry and skill. We owe to him, indeed, almost all the light which has broken upon this subject during this time. All this will readily be admitted by those who have made themselves acquainted with the detached communications from the author which are already before the public. It is difficult, however, to appreciate the full importance or to perceive the exact meaning of papers appearing thus piecemeal, it is always a troublesome and tedious matter to have to hunt for information scattered in an informal state in different volumes, and therefore we are glad to find that, at last, Dr. Garrod has embodied his experience in a connected form. We are glad, also, to have this experience in an extended and ripened as well as in a connected form. As to the book itself, no pains or expense have been spared in "getting it up;" the letter-press, which is lucid in no ordinary degree, is illustrated by several beautiful coloured plates as well as by numerous woodcuts, and our impression on reading carefully through the whole was one of unmixed satisfaction.

The author, in the first place, gives a sketch of the views held by the ancients concerning gout. From this sketch it appears that most of the ancients, even so far back as Hippocrates himself, possessed considerable and very accurate knowledge of the various symptoms of the disease, and of its causes and progress, but that their ideas of its intimate nature were necessarily imperfect, owing to the state of those collateral sciences which are necessary for the elucidation of the accompanying phenomena. Their treatment also, for a similar reason, was completely empirical, and often of a baneful character; still, although their pathology was of a most imperfect kind, an idea was very generally prevalent that the proximate cause of the manifestation of the symptoms which constitute gout was the presence of a morbid matter in the blood, which became, as it were, distilled into the joints. From the time of the ancients until very recently it would seem that little advance had been made in the pathology of gout, although many writers, and especially Sydenham, did much to perfect its description, and to investigate the course which the affection more ordinarily pursues.

At the end of the introductory chapter Dr. Garrod gives some quotations from a remarkable poem or comic play, entitled 'The Tragapodagra,' ascribed to Lucian, in which are found delineated some of the more important features of the disease—as the time of year at which the affection more commonly makes its appearance, the parts affected, the impropriety of interfering with the disease by local treatment, the tendency of the gouty to resort to quacks, and so forth. There is one point in which the opinions of the ancients

seemed to differ much from those held a few years since, namely, with regard to the favour with which gout was regarded; in ancient times it was common for its victims to attempt to pass it off for some other disease, as, for example, a sprain or other injury, whereas now it is often looked upon with favour by those who solace themselves with the remark of Sydenham, that gout, unlike other diseases, kills more rich men than poor, more wise than simple. Our space will not allow us to attempt to go through, even cursorily, the various chapters contained in the work before us, and it must suffice to say, that all the phenomena of the disease, both in its acute and chronic forms, are fully detailed in the second and third chapters, and great stress laid upon the formation of chalk-stones, from their first appearance as small protuberances containing a milky-looking fluid to their subsequent development and consolidation into the hardened masses which so seriously disfigure the patient, put a bar to locomotion, and embitter life. Dr. Garrod also remarks that the cartilages of the ears are parts particularly liable to be affected with these deposits, apparently more frequently than any other external part of the body, and here also their progress can be more easily watched and the changes in them investigated.

The author shows that, at first, the contents consist of a clear fluid, containing innumerable crystals of urate of soda, which, after a time, become aggregated together, forming masses, and at last all the fluid portion becomes absorbed, and the concretion, if on the cartilage of the ear, not unfrequently detached; if more deeply seated, it may either remain in the concreted state or give rise to surrounding inflammation and the formation of an abscess, and thus become discharged. Dr. Garrod remarks that the frequent occurrence in this locality may be often advantageously employed in diagnosis, as concretions of urate of soda are never produced in any other disease than true gout. He also observes that he has never seen a case in which gouty inflammation of a previously healthy structure was followed by suppuration, and ascribes the few recorded cases in which it has been supposed to occur to the deposition of urate of soda in the tissues from previous attacks, and to the formation of matter around this deposit, which then acts as a foreign body. In connexion with this subject we may remark that Dr. Garrod, in speaking of the composition of chalk-stones, gives it as his opinion that they consist essentially of urate of soda, that in fact the crystals of which they are composed are simply this salt; but that, after a time, phosphate of lime and carbonate of the same base may be present from ordinary inflammation causing the deposition of these matters around the urate of soda, as it is so frequently found to be the case in phthisical cases where tubercles become converted into cretaceous masses. In the analysis of gouty concretions other components are commonly found, but these arise from the presence of the tissues in which the deposition has taken place. Throughout the chapters devoted to acute and chronic gout, the various phenomena are fully illustrated by numerous cases which have occurred in the author's practice.

The nature of the changes which the blood undergoes in gout is entered into at some length, for it will be remembered, as we

have had occasion to notice in this journal, that Dr. Garrod, as far back as 1848, read a paper before the Medical and Chirurgical Society, announcing the discovery of uric acid in the blood in gout, and since that time other communications on the same subject have appeared in the 'Transactions' of the above Society, all confirming the conclusions he first arrived at, namely, that "the blood in gout always contains uric acid in the form of urate of soda, which salt can be obtained from it in a crystalline form;" and it is further stated that "from this time up to the present, now more than eleven years, I have been in the habit of examining the blood in this disease when opportunity has presented itself, now in at least a hundred cases," &c.

Dr. Garrod at first employed a chemical process for extracting uric acid or urate of soda from the serum, but afterwards suggested a method which can be employed with much advantage in clinical investigations, and which requires no knowledge of chemistry for its performance, as it consists merely in causing the crystals of uric acid to concrete around a fine fibre, like stone-sugar on a string. This is effected by acidulating the serum of the blood with acetic acid, placing it in a flat glass dish, and leaving it to spontaneous evaporation. To ensure success several little circumstances require attention, for the details of which we must refer our readers to the work itself, where they are fully described. Dr. Garrod shows that not only the blood, but likewise the serum, effused from the application of a blister is rich in uric acid, and that recourse may frequently be had to this latter fluid as a means of diagnosis in difficult cases. The blood in acute gout appears to contain other morbid matters besides uric acid, as small amounts of urea, and also oxalic acid, which last acid can likewise be separated from the perspiration of gouty patients in the form of crystallized oxalate of lime.

Dr. Garrod, who has paid much attention to the urine in this disease, and gives the results of many hundred analyses, has arrived at conclusions differing considerably from those which have commonly been held upon the subject, for he has shown that in the majority of cases, and more especially when gout has become chronic, the quantity of uric acid excreted in the twenty-four hours is deficient, that is, below the average passed by the healthy subject, and that this becomes smaller and smaller, until frequently, in the very severe cases accompanied with a large amount of chalk-stones, the urine is literally free from this body, although the blood at the same time is completely loaded with it. Although the excretion of uric acid is so much influenced by gout, the urea is secreted pretty freely, and some analyses are recorded in which the author found this principle in proportions not very dissimilar to those excreted by healthy subjects under a similar diet. Traces of albumen were frequently met with in gouty urine, more especially when extensive deposits of the chalky matter had taken place.

To the morbid anatomy of gout Dr. Garrod has paid much attention, and the results of many examinations of gouty subjects have led to many important additions to our knowledge on this branch; for he has shown that a deposition of urate is not merely an occasional occurrence, as formerly supposed, but that every attack of gouty inflamma-

tion, however slight, leads to the same, in proof of which cases are detailed and drawings made exhibiting the crystalline salt in the cartilages and ligaments of joints which have been but once affected, and in a subject where the metatarso-phalangeal joint of one great toe had been the only articulation in the body attacked by the disease, thus demonstrating the constant occurrence of deposition in gouty inflammation, and (as this never takes place in rheumatism) forming a completely pathognomonic sign. Drawings are given showing the manner of deposition in the cartilaginous tissues, synovial membrane, and so forth. It is also shown that, by the prolonged action of warm water on alkaline solutions, the morbid matter may be removed from the interior of the tissues, which latter are then left almost unaltered. To prove that the deposits consist of urate of soda only, the watery solution in which gouty cartilage has been digested is made to yield the salt again in the same crystalline form; its real nature is demonstrated by separate testing for both the acid and base. For some years it had been noticed that white streaks were occasionally seen in the kidneys of subjects who had died with advanced gout, but Dr. Garrod has shown that they are almost constantly met with; in all cases save one he has found them, and in that exceptional case the patient had only suffered from two slight attacks of gout, and these confined to one great toe. The shrivelled kidney was almost always observed, except in very early cases, and these facts, it is supposed, account for the frequent presence of traces of albumen in the urine, and likewise for the defective excretion of uric acid from the blood.

With regard to the causes leading to and exciting gout, the author in most points agrees with other writers on the subject, but in one or two of them he insists more positively than is usually done, especially as to the little tendency which distilled spirits possess of causing gout, but the great influence of wine and strong malt liquors. The grounds for this opinion he finds in the great difference exhibited by different nations in their liability to this disease, gout being almost unknown among the whisky-drinkers of Scotland, and as common among the port-wine-lovers of England.

Although our space scarcely permits further discussion on this subject, we cannot help alluding to one very remarkable fact which Dr. Garrod has made out, namely, that the influence of lead is most powerful in inducing gout; that in 25 per cent. of the cases of gout which have come under his care in hospital practice, the patients were either painters or plumbers, or had, at any rate, been under the poisonous influence of lead. In explanation of this fact, it is shown that even in lead-colic and wrist-drop, occurring in subjects who have never experienced gout, the blood very frequently contains uric acid, and that even when lead is given medicinally it appears to have a considerable influence on the function of the kidneys, especially in its power of excreting uric acid. From what we have already stated, the view of the nature of gout held by the author may be surmised, but to the pathology of the disease he devotes considerable space, first giving the opinions of the ancients, then those more recently held, both by the advocates of the doctrine of the humoralists and solidists.

Cullen's ideas are particularly alluded to and combated, and the results of the author's own investigations expounded, which may be thus summed up. It is essential for the production of gouty inflammation that the blood should contain a large amount of uric acid, but that its presence alone does not explain the paroxysm. In order that such should be produced, it is necessary that a deposition of urate of soda take place, and this deposition Dr. Garrod is inclined to look upon rather as the cause than effect of the inflammation, for he brings forward much evidence to show that inflammatory action is rather antagonistic to deposition, or, in other words, that the inflammation has the effect of destroying uric acid, and thus purifying the system. The causes of the blood becoming thus loaded with uric acid are considered to be at least two in number; first, the abnormal formation of the principle, the result of derangement of the stomach and viscera concerned in the digestive process; secondly, deficient excretion, arising from loss of power in the kidneys. Dr. Garrod is inclined to look upon the disease, when the former cause is very prominent, as typical of the *rich man's gout*, but when the latter condition prevails, as partaking of the character commonly designated *poor man's gout*. For the various arguments in favour of these views of the nature of the disease, and for much other matter contained in the chapter on pathology, we must refer our readers to the work itself.

The treatment of regular forms of gout occupies considerable space, and is divided into the management of the acute and chronic disease, with separate chapters on the action of colchicum and the employment of mineral waters. In acute gout the author recommends, except in particular instances, that the diet should be very light, and chiefly amylaceous, with the free use of diluents, but the avoidance of alcoholic stimulants is strictly enjoined. As far as the medicinal treatment is concerned, he thinks the administration of some simple alkaline saline, combined with moderate doses of colchicum, and the use of mild aperients, if called for, is all that is needed, but that in certain cases some modification of treatment may be required, and various questions may arise as to the propriety of using other means, such as local or general bloodletting, anodynes, or stimulants, &c.; and a full account will be found of the author's experience of these different remedies in the treatment of the affection. The action of colchicum is particularly dwelt upon. Dr. Garrod appears to have made a very careful investigation of the subject, and some hundreds of analyses of the effect produced on the urine and other secretions. From these he draws the following conclusions:

"1st. There is no evidence that colchicum produces any of its effects upon the system by causing the kidneys to eliminate an increased quantity of uric acid; in fact, when the use of the drug is continued for any lengthened time, it appears to exert a contrary effect.

"2dly. That from the observations above detailed, we cannot assert that colchicum has any influence upon the excretion of urea, or the remaining solid portion of the urine.

"3dly. That colchicum by no means acts in all cases as a diuretic,

but, on the contrary, it often diminishes the quantity of urine, especially when it produces a marked effect upon the secretions from the alimentary canal."

With regard to its therapeutic influence, Dr. Garrod considers that it exerts a specific power over gouty inflammation, and that the production of any sensible physiological effect is not essential; in fact, he deprecates its use to the extent of causing purging, sickness, or depression of the nervous system, considering that, when such are produced, the patient is apt to have a relapse of the affection; but on the other hand, when carefully prescribed, it has no tendency to prolong the gouty paroxysm or render the disease more chronic.

In the management of chronic gout, which is so important and so much more troublesome than the genuine acute disorder, Dr. Garrod, acting upon the knowledge obtained from the study of its pathology, lays much stress upon plans of treatment which he asserts, from his own experience, to be of great value; and after discussing the value of various other methods, gives a sketch of his own, which he believes to be suitable to the majority of cases. This plan consists essentially of the use of very weak saline solutions, taken on an empty stomach, so as to ensure absorption, and not disturb the digestive functions; the choice of the salines he regards of great importance, and that they should be selected according to the peculiarities of the case, and changed from time to time. Soda and salt, he thinks, should not be indiscriminately prescribed. Experiments are given illustrating the different solvent properties of the different salts, and showing that those of soda have little or no power of holding the uric acid in solution. Dr. Garrod also brings before the notice of the profession a new remedy, the carbonate of lithia, and he points out its advantages, both in gouty and calculous disease, arising from the great power it possesses of rendering uric acid soluble; the only bar to its employment appears to be the scarcity and high price of the salt; but, as he suggests, if the benefit be equal to what may reasonably be anticipated, the supply of the drug might be greatly increased, and its cost proportionally diminished. We cannot pretend in our limited space to give even a short outline of this subject, which occupies about one hundred and fifty pages, and it must suffice to say that the value of the celebrated Portland powder, alkalies, ash-leaves, tonics, and lastly the different mineral waters, as those of Vichy, Wiesbaden, Aix la Chapelle, &c., are treated of at length, and their medicinal powers fully discussed.

A long chapter is afterwards occupied in the consideration of the nature and treatment of irregular forms of gout, a subject beset with great difficulties, and upon which authors have written so obscurely. Dr. Garrod endeavours to lay down rules by which affections which are truly gouty may be distinguished from those depending on other causes. He then describes those forms named retrocedent gout, affecting the stomach, heart, or head, and the varieties often turned misplaced or anomalous gout, and gives instances from his own practice in which the digestive organs, heart, respiratory and urinary organs, as also the muscular and nervous systems, have been implicated.

The last part of the book is devoted to what is termed rheumatic gout, though Dr. Garrod believes that a disease which is really compounded of gout and rheumatism does not exist, but he does not deny the possibility of gout occurring in rheumatic subjects, or rheumatism attacking those who are of a gouty habit. He states, however, that under this name are included many diseases, as chronic forms of gout, chronic or subacute rheumatism, and besides these, a malady partaking essentially of the nature of neither gout or rheumatism, and often named chronic rheumatic arthritis, but which he proposes should be called *rheumatoid arthritis*. The distinctive characters of these different affections are carefully examined, and a table showing their differential diagnosis introduced, by which they may in most cases be distinguished from each other. The characters of rheumatoid arthritis are then described, as also what has been made out concerning its pathology and best method of treatment.

In conclusion, we would repeat the favorable sentiments we expressed at the beginning, and recommend our readers to get the book and form an opinion for themselves.

Cases illustrating the views of Dr. Brown-Séquard as regards certain points in the Physiology of the Nervous System. By Dr Ogle, Assistant-Physician to St. George's Hospital, &c. ('Med.-Chir. Rev.,' Oct. 1859.)

Dr. Brown-Séquard may thank Dr. Ogle for so much additional evidence. The cases given, seven in number, are, with one exception, from the records of medical experience in St. George's Hospital. The main particulars are as follows:

Case 1.—Dislocation of some of the vertebræ, and projection of bone into the anterior surface of the spinal cord, the posterior columns remaining entire; perfect loss of sensibility and power of movement in the lower limbs.

Case 2.—Carcinomatous disease of the dura mater at the edge of the foramen magnum, encroaching greatly on the outer or white parts of the spinal cord; absence of any anæsthesia of the skin as to tactile impressions.

Case 3.—Fracture of the dorsal vertebræ and sternum. Softening of the anterior and central parts of the spinal cord; the posterior columns entire. Loss of power of moving the lower limbs. Considerable anæsthesia as regards pinching and pricking of the surface (but incomplete) of the integument of the lower limbs.

Case 4.—Cyst of considerable dimensions in the right portion of the pons varolii. Great loss of power of motion and of sensibility to pricking and pinching in the "left" arm and leg, and side of the trunk. Also numbness and diminished sensibility of the skin of the "right" side of the face and nose, and of the "right" temple, with increased vascularity of the conjunctiva of the "right" eye.

Case 5.—Extravasation of blood on one side of the median line of the pons varolii. Complete loss of power of movement in the muscles of the right arm and leg, and also of sensibility as regards pinching and pricking of the integuments on the same side of the body.

Case 6.—Large masses of scrofulous deposit in the right portion of the pons varolii and medulla oblongata; general loss of muscular power; great numbness and "coldness" of the left arm and hand.

Case 7.—Laceration of the cervical portion of the spinal cord, the left side being mainly affected, in connexion with dislocation of the vertebræ; contactile sensibility of the skin interfered with, chiefly on the opposite (the right) part of the body.

1. *A practical account of General Paralysis, its mental and physical symptoms, statistics, causes, seat, and treatment.* By Thomas J. Austin, m.r.c.s. (8vo, London: Churchill, pp. 225, 1859.)
2. *On General Paralysis.* ('The Journal of Psychological Medicine and Mental Pathology.' Edited by Forbes Winslow, m.d., d.c.l. April, 1859.)
3. *On General Paralysis.* ('Traité des Maladies Inflammatoires au Cerveau.' Par le Dr. J. Calmeil, Medicin en Chef de la Maison Imperiale d'Charenton. 2 vols. 8vo, Paris, 1859.)

It is not a little singular that, while the subject of general paralysis has received much attention from physicians in France, in England it has excited comparatively little interest; that while the literature of the subject is large and valuable in the former country, it is but scanty and of questionable importance with us. Not that the affection has been entirely neglected by English physicians, for, thanks to many admirable articles which have appeared from time to time in the 'Journal of Psychological Medicine,' we have generally been kept well informed as to the progress of thought and research respecting the disease among our Continental brethren; and, moreover, the subject has invariably received more or less attention in our systematic works on medicine. We heartily welcome, however, indications among the profession at home of a more active attention to this subject. We have noted lately, in reference to it, an article (still unfinished) by Dr. Harrington Tuke, in the 'Asylum Journal of Mental Science;' also a very valuable article, of which the author's name is unstated, in Dr. Forbes Winslow's 'Journal.'

We have, moreover, to notify the recent publication of a distinct treatise on the disease, by Mr. Austin, formerly Medical Officer of the Bethnal House Asylum—a treatise of considerable interest, since it is, we believe, the first specific work on general paralysis which has been published in the English language. It is but just, however, to mention the publication, in 1848, of a critical essay, by Dr. J. M. Winn, which had originally appeared in the pages of the journal last mentioned, and which had been written *apropos* of M. Hubert Rodrigue's 'Traité de la Paralysie Generale Chronique.'

Mr. Austin's work and the article referred to in the 'Journal of Psychological Medicine' require especial notice at our hands; and we propose, in addition, to terminate our report on this subject with an abstract of M. Calmeil's matured opinions respecting it, as detailed by him in his lately published work on inflammatory diseases of the brain.

1. Mr. Austin's work is almost entirely founded upon personal experience, and his vivid and accurate account of the symptoms and progress of the disease will prove of great value to those who have had little opportunity of observing for themselves. He describes at length, and very happily, the general progress of the cases which have come under his care; he treats numerically of the results of those cases, and endeavours to trace the etiology of the affection; he reports the progress and autopsies of twenty-six cases, and from these data he endeavours to arrive at a clear notion of its pathology; and, in conclusion, he gives an account of the treatment he has found most useful.

The post-mortem changes most constantly found in the brain of the cases examined by Mr. Austin, consisted chiefly in more or less manifest alteration in the central portions of the organ, and particularly in the *thalami optici*. The changes in the thalami he would refer to one of four conditions: "1st. To disorganization or softening. 2d. To degeneracy with or without induration. 3d. To atrophy, diminution of size without apparent histic change. 4th. To vascular changes without any recognisable structural lesion, to hyperæmia with numerous exuding puncta, to anæmia with many empty channels" (p. 183). Upon the localization of these changes in one or other thalamus, Mr. Austin is disposed to build a theory of the immediate causation of some of the most marked alterations in the mental symptoms of the disease, attributing the melancholic mania which occasionally accompanies it to pre-eminent affection of the right thalamus; the elated mania to affection of the left. He has also attached certain peculiar pathological and physiological speculations to the affection of the irides often noticed in the progress of the disease. These speculations are certainly ingenious, but they are founded upon a very narrow basis. His account, however, of the various deviations from the normal pupillary condition which are observed in general paralysis is very interesting. He writes:

"The most remarkable of these is that condition of the iris which has been aptly termed 'the pin-point pupil.' It is principally remarked during the first stage of the malady. The iris is firmly contracted to the size of a pin's point, and its mobility is destroyed, vision being unimpaired. This pin-point condition is rare. I have little doubt, however, that it will be ascertained to be one of the *earliest* symptoms of the first stage of general paralysis. The next form is that in which the iris is markedly contracted and motionless, though the contraction is less than in the pin-point condition. This symmetrical and permanent contraction is not uncommon. The cases in which the pupillary symmetry is not strictly maintained, nor the power of motion quite destroyed, are, however, far more frequently met with. In these examples the pupil is rarely round, but rather irregularly angular. The pupillary areæ may be equal, though the inner margin of the iris be slightly and dissimilarly irregular in both eyes. Sometimes the pupil is permanently midway between contraction and dilatation, very sluggish in its movements, trapezoidal or triangular, and not uniform in the two eyes. The inequality in these instances, though real, is trifling, and though it merit, does not compel, attention.

"The second group of pupillary forms comprises those cases in which the want of symmetry is marked, concomitant contraction of the iris not being a leading feature. Thus, both pupils may be of moderate size, their margins round and regular, one, however, being clearly the larger. In many instances this disparity is most conspicuous. In some cases the affected pupil is obliquely flattened, so that the margin, though regular, is no longer round, but obliquely oval, elliptical, or gibbous. The axis of the pupil is by this flattening completely changed; instead of being directly backwards towards the bottom of the orbit, its direction is obliquely upwards and outwards, or more rarely upwards and inwards. For these altered pupillary axes, converging and diverging, appear appropriate terms. Now and then the pupil is flattened above and below, or laterally, whence result oval shapes with a horizontal or vertical axis. Occasionally the disparity is rendered remarkable by one pupil being strongly contracted and motionless, the other retaining its normal size and mobility. Where, however, one pupil is dilated and sluggish, the other being permanently contracted, the most remarkable deviation from pupillary symmetry obtains. A not unusual condition of the iridal margin is very peculiar. It suddenly juts out like a promontory into the expanse of the aqueous humour. There are sometimes several of these salient projections, sometimes only one. They might be easily mistaken for old iritic adhesions; that they are not so, is sufficiently proved by their sudden appearance, their sudden absence, and then as sudden return.

"In some instances, when the difference of the pupillary areæ is not great, a regular margin being at the same time maintained in both eyes, it is not easy to discover which is the affected, or the more affected organ. If there were a normal mean pupillary area, it would be easy enough, by comparing the two pupils with the standard, to determine which was the more implicated. This, however, is so far from being the case, that the contractility of the iris under a given luminosity can scarcely be said to be the same way in any two individuals; and it frequently varies in the same person according to his state of health, or even of spirits.

"How then is the affected iris to be distinguished? By its diminished contractile power. That iris is the more affected whose motions are the more sluggish. If a general paralytic with equal pupils be taken into a darkened room, it will be seen that one pupil expands more freely in the dusk than the other. As long as the patient remains in the twilight, the disturbed symmetry is apparent. The less expanded is, of course, the more implicated pupil. Pupils that are equal in the patient's ordinary sitting-room, become unsymmetrical in the padded room, which is always somewhat darker."

Mr. Austin writes gloomily of the results of treatment, and states that it mainly consists in the mitigation of symptoms. He recommends the use of Hyoscyamus in large doses (℈j of the extract, gradually increased to ʒss or ℈ij, twice or thrice a day), to calm intense excitement, the avoidance of depressing measures, and a generous and nutritious but unstimulating diet, in the fully developed cases. In nascent cases he recommends "the continued employment of small

doses of mercury," three or five grains of blue pill every night for two or three months. This treatment has appeared to stay the onward progress of the disease; but as the disease occasionally, without treatment, manifests extraordinary remissions, he cannot speak with confidence of the course recommended.

2. The writer of the article in the 'Journal of Psychological Medicine' gives a valuable summary of a protracted discussion upon general paralysis which not long ago took place in the Paris Medico-Psychological Society. Many of the most distinguished of the French physicians practising in insanity took part in the discussion, and the opinions then expressed have been so dealt with in the article as to form a very satisfactory *resumé* of the state of our knowledge of the subject. The writer, moreover, expresses certain original views upon the pathology of the subject, which are too suggestive and of too great interest not to be quoted in full. He writes:

"We may now attempt to indicate what appears to ourselves to be the order of the phenomena and the relations of this interesting affection. Under the influence of certain causes, of such a nature as to produce prolonged over excitement of the brain, amongst which stand out in bold relief the abuse of intoxicating drinks and sexual excesses, acting especially upon constitutions hereditarily or otherwise predisposed to degenerative affections—under the influence (we say) of such determining and predisposing causes, the nervous energy is deteriorated and exhausted; and this result, at first *dynamic* merely, is succeeded, in accordance with the general law of all organs long *functionally* affected, by a change in the tissue itself. This change is anatomically betrayed in the earlier stages of the disease by signs of considerable congestion, attended by increased weight of the cerebrum; and in the later stages, by atrophy of the convolutions, with comparative anæmia and loss of weight. On both these we have a few remarks to offer.

"We conceive that the first development of the congestion is chiefly statical, and a result of the want of that peculiar organic nervous energy which exerts so remarkable an influence over the capillary circulation in all parts of the body; aided by the continual distension of the vessels during the functional excitement of the organ. At times this becomes active, owing to the effort made by the arterial system to relieve itself of the oppressive weight in front. This effort seems to be occasionally successful, and to be followed by relief; at other times it only aggravates the mischief. This congestion appears, though not primitively inflammatory (and here we venture to differ from Bayle, Parchappe, and other great authorities), to assume from time to time the form of a low chronic inflammatory action, which leaves its traces in thickening and opacity of the membranes, and certain other changes in the brain-substance itself, above described.

"With regard to the atrophy and softening of the convolutions, and the effusion of serum on the surface of the brain and within the ventricles, we are not inclined to attribute them to inflammatory action in any degree, but rather to a defect of nutrition of the organ, sometimes primitive, and sometimes secondary to the obstruction to the circulation, coincident with the congestion previously mentioned—a

degeneration of tissue which is met with very frequently in other organs without any evidence of previous inflammation. The serum seems by general consent to be recognised as merely poured out to supply the place of the retreating organ. It must be remarked that this degeneration chiefly affects the gray matter in which the dynamic force of the organ is generally supposed to reside.

"Now it is necessary to inquire how far these views coincide with the symptoms during life, and what are the marks by which these pathological changes betray themselves in the course of their development.

"The data both of physiology and pathology lead us to the conclusion, that although we are not yet able to point out the precise seat of the various functions of the brain, we must recognise a *different* seat for intelligence, volition, sensation, and voluntary motion. (We designedly separate between volition and voluntary motion, the functions being essentially distinct; it is not here the place to discuss this matter, but the fact as here stated is abundantly demonstrable, from the frequent phenomena of the contrast of the earnestness of the will with the imperfection of muscular performance.) Although, then, the special character of this peculiar degeneration is to spread and attack indiscriminately the whole of the organ, but especially the gray matter, yet judging from the phenomena of the disease, it appears not to expend its violence upon all parts equally at first; and according as the mal-nutrition or congestion affects first those layers or sections of the brain which preside over the different functions above mentioned, so the order of the phenomena is either somato-physical, or psycho-somatic—either the intellectual disturbance precedes and predominates over that of the muscular system, or the symptoms of paralysis precede those of insanity; and thus also we have two distinct orders of symptoms, one connected with the physical and the other with the moral nature—a somatic and psychical general paralysis.

"We believe that an attentive consideration of the phenomena of drunkenness will tend to throw much light upon the symptoms attendant upon the early or congestive stage, and likewise to illustrate and explain the striking varieties observed in the outbreak of this affection. There is the most accurate resemblance between these two, only that the one is transitory, whilst the other is progressive and permanent. There is probably the same congestion—there is the same characteristic stammering or difficulty in articulating certain words—the same weakness, uncertainty or trembling of the arms and legs, and general muscular system—the same mental disturbance.

"Now, according to the varying constitution of the subject, the excitement of intoxicating liquors appears first in various forms. One man will betray his intoxication merely by increased sententiousness, moroseness, pomposity, or irritability—in another the first symptom will be an expansive gaiety, and a manifestation of exaggerated universal philanthropy—another will be merely affected in his speech, the intelligence remaining intact—and again another will have his ideas so confused, and yet his consciousness so perfect, that he will not

attempt conversation which he knows he cannot accomplish. In other cases it will be the locomotive system that is affected; the legs are unable to support the body, or to perform co-ordinate movements—or the hands are not competent to accomplish those delicate manipulations to which they are accustomed.

"Strictly analogous are the phenomena of the *début* of general paralysis—all probably due to one and the same cause, congestion affecting some portion or portions of the nervous tissue. In the majority of cases the congestive stage corresponds with the expansive form of delirium, just as in intoxication the first result is most frequently excitement of mind and body; but in other cases it produces depression and melancholia, and in others again it affects primarily the muscular system only. In most instances all the phenomena, both of mind and body, occur at some period or other; but the order in which they occur is susceptible of every possible variation.

"By these considerations it appears that we may explain all the varieties of the disease on rational principles, and also reconcile all the conflicting views which have been advanced as to its nature.

"The degeneration of tissue may attack first that part of the nervous tissue which presides over voluntary motion; and the symptoms of paralysis will then be predominant, or even exclusively present. We shall then have the simple, uncomplicated general paralysis mentioned by Rostan, Pinel, and others.

"It may first attack that part which is the seat of the intellect, whichever that may be; and only affecting very lightly and in a secondary manner the locomotive part, we shall have insanity in which paralysis only appears late as a complication.

"When the disease attacks simultaneously the whole of the dynamic apparatus of the brain, the somatic and psychical phenomena appear at once, and we have the '*general paralysis of the insane*'—the form of disease which has been most studied, and to which attention was first directed, and through which the whole subject has been submitted to investigation."

The phenomena of the disease are next sketched in accordance with these views, and, in conclusion, the writer tells us that, although "nothing satisfactory can be said respecting treatment," yet the recoveries which have occasionally taken place, in which medicine has apparently been little concerned, teach us "not to be in too great haste to relinquish our endeavours after a cure, nor to view as absolutely hopeless even the most unpromising cases."

3. M. Calmeil first gave the name of *general paralysis of the insane* to this disease, in his admirable work upon it first published in 1826. This work ranks high among the classical literature of the profession, and when, after an interval of thirty-three years, M. Calmeil again takes up the subject, we turn with avidity and respect to the matured results of researches which have continued over so long a period.

M. Calmeil believes that the time has now come when we may legitimately affix to this disease a correct designation, and he terms it *chronic diffuse peri-encephalitis*—a name which directly expresses the conclusions arrived at by M. Calmeil respecting the pathology of the affection. He sums up his deductions concerning the uncomplicated disease in the following manner:

1. General incomplete paralysis (or uncomplicated chronic diffuse peri-encephalitis), with mental alienation, ought not to be classed among the diseases of the understanding and movement.

2. It depends, like all affections of an inflammatory nature, upon a vital influence which has the power of attracting or retaining for a long time an excess of blood in certain groups of capillaries.

3. Its nature is proved by the results constantly obtained in exploring after death, either with the naked eye or with the microscope, both the membranes which protect the intra-cranial nervous centres and the nervous substance itself.

4. This malady is chiefly developed on the periphery of the cerebral hemispheres and of the cerebellum; but when it has endured a very long time, it tends to extend either to the deeper regions of the encephalon or to the spinal cord.

5. Males, and young, robust, plethoric, muscular persons, are most liable to the disease.

6. All those causes which have an irritant action upon the nervous system may give rise to the affection.

7. It occasionally threatens before it fully manifests itself, and we are warned of its invasion when we perceive an individual lose his memory, become passionate, foolishly extravagant, indulge ideas that can never be realised, and lose little by little the regularity, freedom, and habitual harmony of his movements.

8. It commences sometimes by a violent congestive attack of an apoplectic or convulsive character, or this attack precedes it several months or weeks.

9. We may consider that it is developed when we note in an individual under examination an undoubted constraint in the pronunciation, uncertainty of gait, an awkward action of the arms, enfeeblement of the mental faculties, ridiculous ambitious conceptions, obstinate melancholic ideas, paroxysms of exaltation or fury.

10. After several—twelve or fifteen—months' duration, there often occurs a species of powerlessness of all the muscular agents, and a more or less complete abolition of the understanding.

11. There is also often a manifest defect in the exercise of the organs of sensation, and in the transmission of tactile and visceral impressions.

12. Sudden exacerbations sometimes occur, occasioned by intercurrent congestive attacks, which attract and accumulate all at once an additional quantity of blood in the vessels of the meninges and of the nervous substance of the encephalon.

13. The extension of the disease has very rarely been arrested, but its progression may be interrupted by remissions, or accelerated by unforeseen recandescences.

14. It is essentially grave, but its gravity is modified somewhat by the extent to which it affects the surface of the brain, either in breadth, or length, or depth.

15. It decidedly compromises life when it has paralysed the action of the pharynx, the œsophagus, and the sphincters; but many patients perish from the supervention of inflammatory affections of the pleuræ, the lungs, or the alimentary canal, before the occurrence of the last degree of muscular paralysis.

M. Calmeil, as the majority of physicians, speaks in a sombre manner on the subject of treatment, but until symptoms of disorganization of the brain occur, he thinks that we are not justified in withholding curative aid. He regards as one great cause of the inefficiency of medicine in these cases, the fact that patients are rarely seen at the commencement of the attack. The early symptoms escape the notice of, or are unapprehended by, friends; and hence when the physician sees the case the mischief has too commonly proceeded too far to be checked. Remissions or intermissions may occur or be brought about in the progress of the disease, and he advises a well regulated antiphlogistic treatment to be adopted. This might be anticipated from his pathological views regarding the disease.

He recommends a diet, nutritious, but neither too rich nor too succulent, diluents and saline drinks, bloodletting, general or local, at intervals—commonly a small bloodletting once or twice a month; occasionally the application of leeches around the arms, behind the ears, on the sides of the neck, or within the nasal fossæ, will suffice to diminish the constraint in pronunciation; prolonged warm baths—from three to four or five hours, if there be maniacal petulance or fury—with the application of cold to the head during the bath; at times the douche succeeds with patients of the class named; pediluvia and sinapisms—hydrochloric acid being added, if it be thought fit, to the pediluvia; finally, the use of resinous purgatives.

This is the species of treatment which M. Calmeil finds most generally useful, but its activity must be diminished when the loss of memory, the deterioration of the intellectual faculties, and the difficulty of speech, become steadily greater in spite of the remedial means employed. When this is the case it is usual to make use of setons, blisters, or the cautery, to the neck.

On the employment of Woorali in the treatment of Tetanus in man. By (1) MM. Vella, (2) Manec, (3) Chassaignac, and (4) Spencer Wells. (1. Comptes Rendus, 29th August and 19th September, 1859. 2. Gaz. Hebdom. de Méd. et Chir., 23d September and 14th October, 1859. 3. Medical Times and Gaz., 3d December, 1859.)

On the 29th of August, 1859, Professor Claude Bernard presented to the Academy of Sciences, in Paris, a communication from M. L. Vella, of Turin, on the employment of woorali in the treatment of tetanus. The author had been led to adopt this mode of treatment by reflecting on the antagonism existing between strychnism and woorali poisoning, and the trial was made in the French Military Hospital at Turin, with the consent of the senior physician, M. Salleron. The patients operated upon were three in number. The two first of these were in a hopeless state from the commencement, but even in them, M. Vella thinks, the effect of the woorali was to relieve the spasms, and in that way to soothe the last moments of the sufferers. The third patient was more fortunate, and it is of his case that the particulars are given.

This patient was a French serjeant, who had been wounded on June 4th, at the battle of Magenta, by a ball which had caused an incomplete fracture of the metatarsal bone of the right foot, with laceration of the tendons and soft parts. He entered the hospital on June 10th, under the most favorable circumstances. Three days afterwards the ball was extracted, and the operation relieved him of much of the pain which the presence of the foreign body had caused him. On the third day after the extraction of the ball, stiffness of the neck made its appearance, attended with difficulty of moving the jaw and the head. There were also slight convulsions, but these were of short duration. The day following the jaws became firmly locked, rendering it at times impossible for him to open the mouth.. On the 18th the occurrence of trismus, opisthotonos, and other characteristic symptoms, left no doubt as to the serious character of the disease, and it was declared by all the surgeons attached to the hospital to be general tetanus. The condition of the man was so serious and alarming that M. Vella deemed it necessary to bleed him from the arm for the purpose of relieving the asphyxia with which he was threatened. He then, after having freely incised the wound, administered a powerful dose of opium, but these measures produced no good result. On the afternoon of the same day he decided on the application of woorali to the wounded foot; the dose being in the proportion of two grains of woorali to an ounce and a third of water, applied in the form of compress; the strength of the solution was gradually increased until it reached the proportion of twenty grains of the woorali to nearly three ounces of water. Three quarters of an hour after the application of the weaker solution, and half an hour after the more powerful was employed, a visible diminution of the tetanic rigidity was the result, followed by such complete muscular relaxation, that the patient was almost immediately able to drink, to take soup, to urinate, and to sit up in bed. At the commencement of the treatment it was remarked that as soon as the peculiar physiological effects of the woorali began to pass off the tetanic spasms reappeared with as much violence as ever, and that the wounded leg was always the first part of the body affected by them. After three days of this treatment a large blister was applied to the thigh, in order to secure a more extensive absorbent surface, and the solution was applied to it as well as to the wound of the foot. For four days the dressings of the entire absorbing surface were renewed every three hours, then every five hours up to the twelfth day, when they were reduced to twice in the twenty-four hours. It was remarked by M. Vella that the wound of the foot and the raw surface produced by the blister were not irritated by the application of the woorali, as they healed very rapidly. M. Vella resumes his case in the following language: "The woorali, which for the first eight days succeeded in rendering greater the interval between the paroxysms, and in diminishing their intensity, ended by making them disappear entirely; and on the 10th of July the patient was able to leave his bed for the first time without experiencing any convulsive shock." On the 15th he went out for an hour, and on the 25th of the same month he left the hospital perfectly cured.

M. Manec's case occurred in the Hôpital la Charité, in Paris. The patient, a cabman, æt. 39, whose right shoulder-blade and forearm had been fractured by a blow from the pole of an omnibus, was admitted into the hospital on the 7th of September, 1859. General tetanus came on during the evening of the day after admission. On the morning of the third day a small incision was made with a lancet about the middle of the left arm, and as soon as the blood had ceased to flow, two drops of a watery solution of woorali, each drop containing a demi-milligramme, were dropped into the wound. This was at 2·45 p.m. At 2·55 p.m. two additional drops were introduced, but without any result. At 3·15 a puncture was made in the upper portion of the fore part of the chest, and a drop of a stronger solution introduced—a solution of which each drop contained a demi-centigramme. At 3·25 a drop of the same solution was introduced into the wound in the arm, and at 3·32 another drop into the wound in the chest. Every five minutes from the commencement of the treatment the pulse was examined, and found to range between 32 and 40 in the minute. At 3·40 a granule of pure woorali, weighing two and a half centigrammes, was introduced into the wound in the arm, but as yet there was no amelioration in the symptoms. On the contrary, the spasms were becoming more frequent and more violent. At 4·20 an unusually violent paroxysm seized the patient. At 4·55 a granule of the solid poison, weighing two and a half centigrammes was introduced into the wound in the chest, and at 5·12 five drops of a solution, containing 20 per cent. of woorali to one gramme of water, was injected by means of a syringe into the subcutaneous cellular tissue below the clavicle. At 5·53 five drops of the same solution were again injected in the same manner. At 8 p.m. twelve drops of this solution were injected, and then the treatment was abandoned. From the beginning there had not been the slightest sign of amendment, but the spasms went on continually gaining in severity and frequency. Death happened at 10·15 p.m. In the whole course of treatment twenty-seven centigrammes of woorali were used.

M. Chassaignac's patient was a young man, æt. 24, who had received a severe gun-shot wound in the hand. This was on the 1st of September, 1859. Symptoms of trismus set in a fortnight later, for which musk and opium were given internally, and chloroform frictions employed externally. On the 19th the tetanic symptoms had seized upon the trunk, and when seen the patient was in a state of emprosthotonos, his face pale, his limbs cold, and his breathing almost asphyxial. The treatment now was to moisten the wound every two hours with a solution of twenty centigrammes of woorali in 200 grammes of water, and to give at the same time internally, every hour, two tablespoonfuls of a mixture containing ten centigrammes of woorali to 120 grammes of julep. The first dose was given at 7 p.m.; at 8 p.m. the patient felt better, breathing more easily, and the clenching of the teeth being somewhat less firm. On the day following (September 20th), the treatment having been sedulously persevered in, the state was very much as it was late on the evening of the 19th. On the 21st the state was manifestly more satisfactory, the rigidity being less marked, and the spasms less frequent. The strength of the solution for external

application was doubled; that of the draught was not interfered with. On the 24th and 25th, fearing that the rapid cicatrization of the wound might prevent a sufficient amount of absorption, the quantity of the woorali in the draught was doubled. The treatment was still in progress when M. Chassaignac brought the case before the Parisian Society of Surgery; but with the exception of a little trismus, the patient at that time would seem to have been convalescent. We gather that the woorali was still given and applied.

The cases in which this plan of treatment was tried by Mr. Spencer Wells, are the first which have occurred in this country. Two of them occurred in the Samaritan Hospital, the third in private practice. The particulars given are very scanty. The first was a case of chronic, but severe trismus, going on to opisthotonos, appearing a fortnight after ovariotomy, in a patient 41 years of age. The exciting cause appeared to have been a draught of cold air. Woorali was used hypodermically and epidermically, six grains of the extract having been used in six days. The patient recovered. In a second case, acute tetanus appeared seven days after ovariotomy in a lady, 38 years of age, and proved fatal in three days. The treatment was commenced by assafœtida injections, and woorali was afterwards used, the softened extract having been inoculated in both arms. In the third case, tetanus appeared four days after a simplified perineal operation for the relief of prolapsus uteri in a patient, 51 years of age. It progressed slowly; was treated first by opium and ether, afterwards by woorali, and latterly by chloroform, the influence of which was kept up at intervals for forty-eight hours. The patient died on the evening of the ninth day.

— It is no easy matter to draw any safe deductions from these facts. It is certainly a natural inference, considering the peculiar paralyzing powers of woorali, to suppose that it might prove a remedy in tetanus; and so long ago as 1811 such an inference was made by Sir Benjamin Brodie, and shortly afterwards put to the test upon an ass suffering from tetanus, by Professor Sewell, at the Royal Veterinary College. About the same time, also, a series of experiments were instituted upon animals poisoned by strychnia by Mr. Morgan, of Guy's Hospital, and again, three years ago, by Dr. Harley, of University College. Dr. Harley, moreover, in 1856, aided by Professor Varnell, of the Royal Veterinary College, employed woorali in the treatment of a horse suffering from idiopathic tetanus. The idea of treating tetanus by woorali, therefore, had been fairly broached in this country before Professor Claude Bernard gave occasion to it by his experiments with *curarina*—the active alkaloid of woorali—so that the credit of conceiving it must belong to Englishmen, if credit there be in it. Much remains to be done, however, before woorali can be accepted as a promising remedy in tetanus. A preparation of uniform strength must be obtained, and this is no easy thing, for even curarina itself would seem to be of very variable power. And even if it be found that the reason which leads to the employment of woorali in tetanus is a sound one, it is still a question whether *conium*, the physiological action of which is almost identical with woorali, will not be a more suitable remedy—more suitable especially as being of known

strength, and as being introduceable into the system by the stomach.

A case of Thoracic Aneurism in which the symptoms had been present ten years, and in which a nearly fatal hæmorrhage occurred four years and eight months previous to the fatal termination. By W. F. Gairdner, M.D., Physician to the Royal Infirmary, Edinburgh, &c. ('Medico-Chir. Trans.,' vol. xlii, 1859.)

The chief interest of the case consists in two circumstances—in the very long period which exists between the occurrence of rupture of the sac and the ultimate fatal event, and in the occurrence of hæmorrhage, in a modified form, at intervals, during the whole of that very long period. The case is also interesting in relation to the diagnosis of thoracic aneurism, the probability being, as Dr. Gairdner maintains, that continuous, though moderate hæmoptysis, without disease of the heart or lungs, and accompanied by stridulous breathing, must be regarded as diagnostic of such disease.

The subject of this history was a merchant of robust frame, of more than average intelligence, and who at the time of his death was about forty years of age. He was under the author's care during the latter four years of his life, and, from his own statements, a very distinct history was obtained, extending back to ten years before the fatal result. It was then that he first complained of pains in the left side and shoulder, which were regarded as rheumatic, and were always relieved by violent exercise. They were, however, unaffected by treatment; and after continuing in very much the same state for more than three years, he was for the first time informed that there was some affection of the great vessels. Pulsation became evident in the following year, and the sputa, though occasionally of a yellow colour, were never distinctly blood-tinged till the autumn of 1853, when hæmoptysis to an alarming extent occurred on two distinct occasions in the same day. After this, he submitted to a variety of treatment, and at length came under the care of the author in the following April. He then exhibited every sign of a large aneurism of the aorta, presenting itself in the left front just under the clavicle, and passing upwards and backwards so as partially to involve the left subclavian. The left pulse was at this time weaker than the right, and in the end became nearly lost. He was directed to take gentle exercise, and partially to resume business, which he had abandoned; to take light nourishing diet, and abstain from medicine; now and then, when the pain was severe, to put on two leeches over the tumour; and to think as little as possible of his complaint, except by way of caution against violent movements. Under this plan his general health improved, but the disease slowly made progress; and he continued to bring up a more or less tinged expectoration—sometimes rusty, sometimes purple—with only the intermission of a few weeks at most, during the remainder of his life. During the last year he had severe pain, almost like angina pectoris; he lost flesh; had occasional difficulty in swallowing; and brought up blood more copiously, though never in large

quantity nor unmixed. At length a small gush of blood, which probably did not exceed nine or ten ounces, occurred, which terminated his life by suffocation in a few minutes, on the 19th April, 1858.

On post-mortem examination, the aneurism was found involving the descending aorta from the origin of the subclavian to the extent of several inches. It lay behind and above the left lung, to which it was firmly adherent. The left bronchus was stretched over the sac, and its posterior wall was absorbed throughout, the coagulated fibrin being freely exposed to view from the interior of the bronchus. Another small opening, with smooth edges, evidently of long standing, existed at the bifurcation of the trachea, and also rested upon firm, solid, laminated clot.

In discussing the question of hæmorrhage from aneurism generally, it is remarked that the case of the late Mr. Liston, recorded in the 'Lancet' for December, 1847, was, perhaps, the first to call the attention of the profession to the possibility of hæmorrhage occurring from this source so long as five months before death, the minor discharges of blood which had occurred being before this time referred to other causes than perforation of the sac. Dr. Gairdner has only been able to trace nine or ten instances in which hæmorrhage was recorded to have occurred more than one month before death, and only one exceeding the period in Mr. Liston's case—namely, a preparation in Guy's Hospital,* pointed out by Dr. Sibson, in which the patient had severe hæmoptysis seven years before death. It happened to the author, some years ago, to be able to place on record another instance, in which an aneurism of the superior mesenteric artery had given rise to hæmorrhage from the bowels twenty-two months before the patient's death. ('Monthly Journal of Medical Science,' vol. x, p, 83.) Dr. Gairdner refers also to two cases in which aneurisms, opening externally, had ruptured, and given rise to very severe hæmorrhage at long intervals before death: one communicated to Mr. Syme ('Monthly Journal of Medical Science,' vol. x, p. 89), where the man lived four months, and died of typhus fever; another recorded by Dr. Stokes ('Diseases of the Heart and Aorta,' p. 582), in which frequent hæmorrhages took place during a year, after which the tumour became dense and hard, the cough and dyspnœa abated, and three weeks after the last attack, the patient left the hospital, saying that "he felt quite well." Dr. Gairdner attributes the minor hæmorrhages, in almost all cases, to rupture of the sac; and this cause of hæmorrhage is very apt to be overlooked when it amounts to no more than an inconsiderable leakage, which may last for weeks or even months. He describes four varieties of hæmoptysis as likely to occur, and endeavours to associate them with differences in the site and relations of the tumour, and the changes occurring in the lung structure. These he characterises as being very rarely of an inflammatory

* The patient from whom this preparation was taken was a woman, 54 years of age, a patient of Dr. Bright. She had been subject to palpitation, and pain between the shoulders. There was no statement in the report of the case as to the hæmorrhage there had been six or seven years previously. No tubercles were detected in the lungs, nor disease in the heart.

character, but more commonly either of the nature of collapse from pressure on a bronchus, or of chronic infiltration of blood directly or indirectly from the aneurism. He calls in question the explanation usually given of these minor hæmorrhages, that they are produced by venous congestion—1st, because, when pressure on a vein has occurred, hæmorrhage has almost always been associated with direct pressure of the aneurism on the trachea or bronchi; 2dly, because, in his experience, some of the most characteristic cases of slight and continuous hæmorrhage had been from aneurism in which no pressure on the pulmonary veins was possible. He does not venture to assert that blood in the discharges of a patient affected with aneurism *always* indicated the communication of the sac with a mucous membrane, but he believes it generally does so, the more especially when hæmoptysis occurred, if the aneurism pressed on the trachea, and if it were unaccompanied by indications of pulmonary change.

In conclusion, the author points out the great importance of this conclusion with reference to diagnosis in obscure cases. He says that in aneurisms characterised chiefly or exclusively by laryngeal symptoms, it is often extremely difficult to arrive at a satisfactory conclusion as to the cause of the very distressing dyspnœa. In this class of cases, he considers the presence of even small quantities of blood in the sputum a most valuable means of diagnosis; for if there be laryngeal dyspnœa and stridulous respiration, if the epiglottis be not thickened, if the mucous membrane of the larynx, so far as it is within reach of the finger, be sound, and if with these signs, positive and negative, there be a persistent tendency to even the slightest amount of blood in the sputum, while auscultation and percussion give negative results, both as regards the lungs and heart, aneurism may, in the opinion of the author, be predicated with as much certainty as is possible without the physical signs of tumour. Further, such an aneurism may be assumed to be small, arising from the back part of the arch, or from the commencement of the innominate artery, and so placed as to entangle either the left or the right recurrent nerve.

On the true character of "Vitiated" Alvine Excretions. By Dr. Inman, of Liverpool. ('British Med. Journal,' 11th June, 1859.)

The following important remarks are from a paper on the influence of vitality upon the excretions. The practical proposition which Dr. Inman seeks to establish is this—that if a physician finds that the excretions of his patient decompose more rapidly than they would do during health (under the same external circumstances of light, air, and heat), he may feel certain that the vital powers are seriously impaired.

"My attention," says Dr. Inman, "was first called to the subject in the following manner. When M. Ledoyen came to Liverpool, about twelve years ago, to demonstrate the deodorizing power of his 'disinfectant' fluid, among other experiments the following was made. The alvine dejections of a certain number of patients, ill with fever and various other diseases, were all placed side by side, to the number

of thirty or more, in a small room attached to the pauper hospital. They remained all night in the chamber, and the next day M. Ledoyen commenced operations. After demonstrating the general advantages of his compound, he proceeded to sprinkle a few drops of his diluted mixture into each utensil. The amount used was the same in each case; but the appearance produced varied immensely; and, according as the chemical change was excessive or otherwise, he judged of the condition of the individuals who had passed the 'motion.' 'This patient,' he would say, 'is not very bad; that one is seriously ill; this one is dying; this one is nearly dead,' &c. As his observations were correct, he was asked how he judged of the danger the patient was in? His reply was, 'that he had found, in the course of his experiments, that fæces decomposed rapidly or otherwise, according to the debility of the individual passing them.'

"For a long period, the principle here enunciated seemed to belong to the class of interesting but useless facts. More recent observations have, however, shown that it may be turned to good practical account.

"If any one will diligently consult the napkins used by infants, he will find that, during the time the motions are of a good healthy yellow colour, they have a peculiar odour, which they retain for twelve hours at least; but if, from any cause—*e. g.*, debility in the nurse, or inappropriateness of the food—the child loses its healthy condition, the motions not only change in colour and consistence, but in smell, and decompose in a very short time after being passed. Where there is diarrhœa and excessive depression of the vital powers, the motions are often found to be decomposed in a few minutes. We may notice, too, that a similar result is met with at the same time in the other secretions of the child; and that the urine decomposes quickly, and the breath is foul or sickly.

"But it is not in children alone that this change may be detected: it is equally evident in adults. If, for example, the doctor is called to attend a case of diarrhœa, where there is always more or less debility present, he may consider it necessary to inspect all the alvine discharges that take place. His visits are at intervals of twelve hours only; and he has on each occasion placed before him perhaps as many as six motions in different utensils. He is probably struck with the different odour exhaled from the various specimens, and notices a difference in the colour; but a few words from the nurse soon explain the mystery. The dark brown stinking ones are those passed the longest period ago; the healthy looking and smelling ones are those passed only a short time before the doctor's visit.

"Simple though this fact seems to be, it is one which is not universally acknowledged and acted on; I have known 'motions' which have simply become decomposed taken for 'foul secretions,' and the patient dosed with mercurials, under the impression that they would improve the condition of the bowels. The result has been what might have been anticipated; the patient has got weaker, and the bowels no better. The following case came under my notice some time ago. It is valuable as illustrating the danger resulting from inattention to these points.

"An elderly gentleman was under treatment for indigestion. He

was improving upon a tonic plan of treatment, when he was induced by his friends to have 'a second opinion.' When the physician called, he was shown a motion which had been passed twelve hours before. It had undergone decomposition, and was pronounced to be extremely 'vitiated;' and, with the intention of improving the secretion, a mercurial alterative was prescribed. This acted freely; and when the visit was made the next day, the motions were all inspected, and as that passed the last seemed to be the most healthy, the natural conclusion was that the medicine had done good. It was therefore persevered with; on the next occasion, and for some time subsequently, only the last motion passed was inspected, and, as it had not had time to be decomposed, it was thought to be healthy, and the patient was supposed to be 'better,' as his secretions were no longer 'vitiated.' But, notwithstanding this opinion, it was clear to the first attendant that the man was getting more feeble and debilitated day by day. If the medicine did improve the secretions, it certainly impaired the strength. It was then doubted whether the first inference was correct; and, to decide this, the nurse was directed to save all the 'motions,' and arrange them in the order in which they were passed. When they were inspected, the same order of things was noted as at the first examination; but the older ones appeared more vitiated than ever, and the most recent ones had begun to change in colour. It was interesting to know how the same fact struck the two doctors. One remarked, 'that with such excretions, there was greater necessity for an alterative than ever;' the other said, 'that seeing such had been the effect of the alteratives which the patient had already taken, the sooner they were suspended the better.' This led to a warm debate, which was ultimately decided by an appeal to the nurse. Thus: 'Nurse, which is the last motion passed?' 'This' (the healthy looking one.) 'How long has it been passed?' 'An hour.' 'What was the appearance of the other motions when they were passed?' 'They looked precisely the same as the one first referred to.' 'Then they have all changed in appearance since they were placed here?' 'Yes.' 'Do the motions change in appearance now more rapidly than they used to do.' 'Yes.' This confirmed the idea that the 'vitiated character of the excretions' was, so to speak, a post-mortem appearance, and simply indicated a smaller amount of vital force (as opposed to chemical) than is usually possessed by vital products where separated from the body. The termination of the case showed the justice of this view, for the patient's strength continued to diminish, and he died shortly afterwards of pure debility and exhaustion. It is useless to speculate upon what might have been the result had the phenomena been read correctly from the first.

"As decomposition takes place in the alvine secretions very rapidly in fevers and all diseases marked by great debility, the practitioner must ever have his attention alive to the fact, that what he calls 'vitiation' may be more apparent than real, and a sign which calls for stimulants and strengthening remedies rather than mercurial alterative medicines, whose invariable effect is to make a weak patient weaker."

II.

REPORT ON THE PROGRESS OF SURGERY.

On Surgical Fever. By J. G. Simpson, M.D., Professor of Medicine and Midwifery in the University of Edinburgh. (Medical Times and Gazette, April 23d and 30th, and May 14th and 21st, 1859.)

Every patient who is placed upon an operating table runs no small risk of death, and in severe operations he is in as great, if not greater, danger than a soldier entering one of the bloodiest and most fatal battle-fields. And yet a very few, probably not more than one in eight, are carried off by the immediate surgical consequences and complications of the operation itself—tetanus, sloughing, hæmorrhage, suppuration, and so on. On the contrary, they perish with symptoms of acute fever during life, and showing on examination after death, in various internal organs, the products of acute and recent inflammation. They die of surgical fever, a disease consisting of a combination of co-existing acute fever and acute internal inflammation, just as puerperal patients die of puerperal fever, a similar compound disease, consisting, exactly like surgical fever, of co-existing acute fever and acute internal inflammation. This identity of nature in surgical and puerperal fever, Dr. Simpson thinks, is fully borne out by the post-mortem disclosures in the two affections, and this, we think, is proved by his statistics. Dr. Simpson's first reference is to Dr. Chever's able inquiry into the causes of death after injuries and surgical operations, in the 'Guy's Hospital Reports' for 1843.

"Of Dr. Chever's 153 surgical patients," he says, "134 died of surgical fever, and presented after death recent acute inflammatory effusions and lesions in various internal organs. The relative frequency with which different internal organs and parts of the body were found attacked with acute inflammation in these 134 cases, is shown in a condensed form in the following table:

"*Inflammatory Lesions in* 134 *Cases of Surgical Fever.*
(*From* Chevers.)

Peritonitis was observed in . . .	52 cases.
Enteritis (excluding cases of Hernia) . .	9 ,,
Pneumonia and its results . . .	47 ,,
Pleuritis	35 ,,

Bronchitis, Laryngitis, and Diphtheritis	4 cases.
Pericarditis	14 „
Arteritis and Aortitis	4 „
Phlebitis	3 „
Meningitis	27 „
Cerebritis	9 „
Cystitis	8 „
Pus in muscles or joints	3 „
Inflammation of Tunica Vaginalis	1 „

"When in Vienna last summer, my nephew, Dr. Alexander Simpson, obtained access to the pathological records of the large General Hospital there, where the autopsies are made under the supervision of Professor Rokitansky, and drew up for me from these records some statistical tables to show the relative frequency with which the various organs and parts of the body become the seat of secondary inflammatory changes in the cases of patients dying of surgical and of puerperal fever respectively. Allow me to call your attention now to this

"*Table, showing the relative frequency with which different Organs and Parts of the Body were found to have undergone recent Inflammatory Changes in* 100 *Cases of Surgical Fever.*

The lungs and pleura in	69 cases.
Veins	53 „
Seat of the operation or injury	40 „
Cellular tissue and muscles	28 „
Peritoneum	16 „
Brain and its membranes	16 „
Bones and joints	15 „
Spleen	10 „
Kidneys	9 „
Stomach and Bowels	7 „
Bladder	6 „
Liver	5 „
Pericardium	4 „
Lymphatics	3 „
Arteries	2 „
Vagina	2 „
Interior of uterus	1 „
Heart substance	1 „
Parotid gland	1 „
Ear	1 „

"The patients in whom inflammatory lesions of these various internal organs and parts were discovered after death, had been subjected to operations and injuries of all parts of the body, and of all degrees of severity, from amputation of the thigh, down to the operation for phymosis, and the simplest, most superficial wounds.

"Consider now that table of the organs and tissues most commonly affected by inflammation in cases of surgical fever, with this

"*Table showing the relative frequency with which different Organs and Parts of the Body were found to have undergone recent Inflammatory Changes in 500 Cases of Puerperal Fever.*

Seat of the Inflammatory Lesion.	No. of Cases.	Percentage of Cases.
Interior of uterus	372	74·4
Veins of uterus	349	69·8
Peritoneum	321	64·2
Lungs and pleura	202	40·4
Lymphatics	129	25·8
Ovaries	78	15·6
Cellular tissues and muscles	46	9·2
Veins other than uterine	40	8·0
Brain and its membranes	23	4·6
Spleen	21	4·2
Vagina and pudenda	19	3·8
Bones and joints	18	3·6
Kidneys	17	3·4
Stomach and Bowels	13	2·6
Pericardium	12	2·4
Mamma	7	1·4
Fallopian tubes	5	1·
Bladder	4	0·8
Parotid gland	3	0·6
Heart substance	3	0·6
Endocardium	2	0·4
Iris	1	0·2
Tonsil	1	0·2
Larynx and trachea	1	0·2

"A comparison of these two tables will serve to show you how far we are justified in speaking of surgical and puerperal fever as analogous in their nature; and the difference in the frequency with which different internal organs and parts are apt to become the seat of the acute inflammatory effusions and changes in the two sets of cases, is owing mainly, if not, indeed, altogether, to the difference in the seat of the primary lesion; for the identity between the two diseases becomes more striking, if we compare the latter of these two tables with such a one as this:

"*Table showing the relative frequency with which different Organs were found to have undergone recent Inflammatory Changes in 19 Cases of Surgical Fever resulting from Operations or Injuries of the Pelvic Organs (including three cases of Herniotomy).*

Seat of the Inflammatory Lesion.	No. of Cases.	Percentage of Cases.
Peritoneum	12	63·1
Lungs and pleura	12	63·1
Seat of wound	5	26·3
Cellular tissue around kidneys	5	26·3
Cellular tissue elsewhere	4	21·
Intestinal Canal	3	15·8

Seat of the Inflammatory Lesion.	No. of Cases.	Percentage of Cases.
Bladder	3	15·8
Liver	3	15·8
Veins	2	10·5
Spleen	2	10·5
Vagina	1	5·3
Uterus	1	5·3
Bronchi	1	5·3
Parotid gland	1	5·3

"The proportion in which different internal organs are the seats of acute inflammatory action and deposits, is very much the same in this table as in patients dying of puerperal fever, apparently, because, I beg to repeat, the primary lesion or wound in the surgical cases included in this table was, as in the puerperal patient, in the pelvic viscera or neighbouring parts."

Dr. Simpson enters at considerable length into the etiology and semeiology and treatment of surgical fever, and his remarks are of great practical value. The great point of the paper, however, is the analogy between this fever and puerperal fever, and it is to this that we would especially and emphatically call the attention of surgeons. Every one knows the danger of puerperal fever, and that great precaution must be taken to prevent it. Something is also known of means of prevention. Let, then, the surgeon suppose that his patients are threatened by a similar danger to that which threatens the puerperal woman, and let him adopt the same precaution; and is it not to be hoped that his practice may be proportionately successful? Half the danger may be overcome by apprehending its nature aright, and we are disposed to think that the service which Dr. Simpson now does to surgeons in pointing out the true analogies of surgical fever, is only second to that which he did in the introduction of chloroform some years ago.

On the importance of saving the Periosteum in resection and in some other operations on the bones. By Dr. Leopold Ollier ('Journal de Physiologie,' Jan. and Apr., 1859).

In this memoir are some experimental researches upon the artificial production of bone by transplanting the periosteum, and upon the regeneration of bones after their resection and complete removal. The facts are of great interest, and their bearing upon practical surgery is obviously of great importance. Dr. Ollier shows, most conclusively, that bone continues to be produced on the under surface of transplanted periosteum, and that by thus transplanting periosteum we may produce bone at will—bone which will form a process of the original bone, or be independent, according as the periosteum is left in connexion with the original bone, or not. By taking strips of periosteum and arranging them in circles, figures of eight, &c., the form of the new bone was modified accordingly. The bone thus obtained is not merely an irregular calcareous mass. It is true bone, having all the microscopic characters, and growing in the same way,

and when fully grown having a medullary cavity and medulla. The new bone is formed in a subperiosteal blastema, and its formation is retarded or prevented by removing this. The blastema itself is semifluid, having free nuclei, or cells with nuclei, together with a large quantity of granular and some fibrillar matter. The new bone appears to be formed without the intervention of cartilage, and certainly the rapidity of the reproduction is directly proportionate to the amount of periosteum concerned.

Dr. Ollier has also established the fact, that after the removal of the articular extremities of two contiguous bones, the two bony extremities are completely reproduced if the capsules and ligaments are left in continuity with the periosteum.

— The surgical bearings of these facts upon resections and autoplastic operations are obvious.

In cases of resection it is not enough to remove the bone, but care must be taken to provide for its reproduction by preserving the periosteum. It is a primary duty to make this provision. In cases of autoplasty, also, it is possible to conceive of many cases in which it will be of vital service to make use of the fact that new bone may be produced by grafting a slip of periosteum of the requisite size and shape. Dr. Ollier makes one other suggestion which seems to be of much value in a surgical point of view. It is, in case of amputation, to save as much periosteum as will serve to close the end of the bone, and to cover up the exposed medullary cavity. He thinks that by this means some dangers would be avoided and some advantages secured, for the periosteum will contract an immediate adhesion to the bone, and heal by bone the wound made by the saw.

A new treatment of Urethral Obstruction. By (1) Mr. Norman, Consulting Surgeon to the Bath United Hospital; and (2) Mr. T. Paget, Surgeon to the Leicester Infirmary ('British Med. Journal,' June 4 and July 2, 1859).

Mr. Norman is an advocate for perineal section where the retention is caused by impassable stricture, and for puncture through the rectum in cases of less permanent obstruction. He relates a case, however, the result of which may suggest the question whether, in cases of diseased prostate, where the difficulty of passing a catheter is such that the patient is unable to accomplish it himself, and where he is unable to procure the constant attendance of a surgeon,—it may not be advisable to allow the bladder to be distended so as to project above the pubes, or to bring about the same state by injecting the bladder; and then *to puncture above the pubis, with the intent of preserving a permanent opening.*

Mr. T. Paget says: "This operation I have seen and practised for fully forty-five years; how frequently I cannot say, but I have done it thrice in the same individual, twice of which were within forty-eight hours, in consequence of his getting the canula out during sleep a few hours after its first introduction. I believe I should be safe to say that in our infirmary, and in private, I must have witnessed

and done more than twenty-five of these operations. I have not once seen any bad result from them; neither urinous infiltration, suppuration, nor even inflammation; and am thoroughly convinced that surgeons, on further experience of this simple, safe, *almost subcutaneous* proceeding, will be 'pretty well agreed' that it is not 'the most dangerous mode of reaching the bladder.' There is comparatively no wound to inflame; there is no violence done to the tendinous sheet of the linea alba; no disturbance of the muscular covering of the abdomen; no exposure of the cellular tissue in front of the bladder. These, of course, are the causes of inflammation and suppuration. Infiltration is next to impossible while the canula is tightly embraced by the skin, tendon, and contracted bladder.

"If it is required permanently to adopt the short flexible tube for micturition, of course it will be right to be in no hurry about the exchange, but to retain the silver one for some days, to allow its track to become consolidated by the adhesive process. I have, in the two cases now reported, found twelve and fifteen days quite enough; probably they are more than enough."

1. *Mr. Norman's Case.*—An elderly man, who had for a considerable time experienced difficulty in emptying his bladder, from disease of the prostate, was twice admitted into the United Hospital for retention of urine; and, as on neither occasion could an instrument be passed, the bladder was punctured through the rectum. The third time, he was admitted under my care. I could not pass a catheter; and as the bladder, then fully distended, occupied a space considerably above the pubes, I punctured it above the symphysis; and, after the escape of the urine, I passed a gum elastic catheter through the canula, and, withdrawing the latter, I secured the catheter in the bladder, and all the urine passed through it. After some time the wound healed around the catheter, and the adjacent parts became consolidated; so that it was certain that the bladder had become permanently fixed above the pubes. I then withdrew the catheter, and, keeping a small piece of bougie as a plug in the opening, the man drew off his water with a female catheter as often as required. It soon became evident that there was no occasion to keep in the plug, as the opening was permanent, and no urine escaped excepting when the catheter was passed; nor did a drop of urine ever pass through the urethra. I had an opportunity of knowing that he lived two or three years after, without suffering any inconvenience.

Mr. T. Paget's Cases.

Case 1.—This is that of Mr. N—, who has raised himself from the ranks by application, quick insight, and entire reliability of character, to a position of considerable command in the glove trade of this place (Leicester). From early life he has suffered much from stricture, which resisted the varied efforts of several surgeons for its removal, and latterly, for some years would not admit any instrument through it into the bladder. His attacks of stoppage of urine had fortunately given way to the introduction of bougies *into* not *through*, the stricture. In May, 1842, when near the completion of his sixtieth year, this mode of relief failed him, and on the 21st, after suffering for several days from entire retention, he submitted to have a well-curved trocar introduced above the pubes. After about ten days it was thought desirable to remove the canula, in the hope of compelling the bladder to resume its function, which it had so far shown no disposition to do. The

patient, however, firmly insisted that he should be allowed to live as long as he could be enabled to by any modification of the instrument, and then die, rather than part with it to return to his old state. This being plainly a determination with him, which a few days talking to did not shake, I got him some gum-elastic tubes, about three inches long, and a silver shield like those of the bladder trocars, with a tube about half an inch long, the tube furnished inside with as deep a screw thread as the thickness of the metal would admit. Into this the elastic tube being screwed when warm was securely fixed. A thin elastic webbing passes round the pelvis from eye to eye of the shield, and fixes the instrument, which is perfectly easy. It is completed by a wooden plug, made water-tight by a slight covering of muslin, and a spiral coil of silk thread.

This has been his only resource for now seventeen years. He is a hale, lively man, full figured, fresh in complexion, and rejoices in his opportunities and capability of walking four or five miles, which he does perfectly free from pain. The tube he changes himself nearly every day. If it remains any length of time, particularly if his digestion be amiss, lithic incrustation irritates the bladder. I have occasionally, during the seventeen years, found his urine mucous, and even muco-purulent from this cause, and from uneasiness produced by the extremity of the tube where it presses posteriorly upon the bladder. When the latter cause is recognised, a variation in the length of the tube changes the point of contact and gives relief. Rest, however, in bed, spare diet, and an aperient, have more commonly removed the muco-purulency in a few days. His only semblance of urine passing by the urethra is a very rare perception of moisture from the penis.

Case 2.—This is that of Mr. F—, æt. 70, who has also suffered for the larger portion of his life from stricture. Of late his attacks of retention have yielded to small bougies or catheters, introduced only *into* the stricture; and it is reported to me that only once for about twenty years has an instrument of any kind reached his bladder, when, Mr. Cooper tells me, he succeeded in passing one of the thinnest elastic catheters. He has frequently tried in vain since this one fortunate occasion.

October 22d, 1855.—The usual mode of relief, by passing a small instrument *into*, not through, the stricture, having failed us for three days, Mr. Cooper and I recommended puncturing above the pubes, having in view, for permanence, the same means of micturition as in the former case. The curved trocar was introduced, and on removing the canula on November 6th (fifteen days), no difficulty was found in passing the same apparatus, with gum-elastic tube. The track was well established either by cicatrix or adhesive effusion sufficiently consolidating the structures the trocar had pierced.

June, 1859.—The plan succeeded perfectly in making him comfortable. He soon acquired freshness of complexion and increased substance, is now to be seen walking erect, and looks at seventy-four a better man than for the last twenty years. No water ever passes his urethra.

Case 3.—The third case shows that, the canula track healing, the same fortunate circumstance as occurred in Mr. Norman's case, of a valvular opening retaining the contents of the bladder for the use of a catheter will not always be the result. Other peculiarities also in this instance of bladder puncturing seem to make it worthy of being narrated here.

A gentleman about seventy, without previous stricture, suffered retention, which he ascribed to being obliged to delay micturition when much incited to it. His urging and pain were unusually distressing, and I was unable to pass the catheter for him.

A physician, and a man of prompt decision, he insisted on relief by para-

centesis vesicæ. I could not persuade him to endure his misery beyond forty-eight hours, and punctured above the pubes.

Anticipation, of course, was high that a simple spasm would soon relax, and the power of micturition return. Nearly three weeks, however, elapsed before urine passed, and then a large quantity of red lithic crystals came with the gush. The collection of this in the prostatic part of the urethra, at nearly seventy years of age, was probably the clue to the attack and to its main features, violence of pain and urging, failure of attempt at catheterism, as well as subsequent delay in the resumption of bladder function.

Even now the case was not at an end; for when the canula of the trocar was removed, my patient became miserable from the constant escape of more urine through the artificial opening than was made by the urethra; and after much annoyance for three or four weeks more, during which we waited for obliteration of the canular track, it seemed certain that its cicatrizing was completed, and I was obliged to pass a suture-pin across it, about which, in a figure-of-eight form, a thin strip of lint was wound, as for hare-lip. The newly formed film of cicatrization was quickly destroyed, the track healed, and my friend was quite well.

Cases of Popliteal Aneurism successfully treated by Flexion of the Knee-joint. By (1) Mr. Ernest Hart, Surgeon to the West London Hospital; and (2) Mr. Alexander Shaw, Surgeon to the Middlesex Hospital. ('Proceedings of the Medical and Chirurgical Society,' April, 26th, 1859.)

The plan pursued successfully in the two following cases may be regarded as a valuable addition to the resources of surgery, but it cannot be looked upon as applicable in all cases. Already, indeed, it seems to have failed in all the other cases in which it has been tried. It has failed in Mr. Shaw's own hands in another case in which he tried it; it has failed in three cases in which it was tried by Mr. Birkett in Guy's Hospital, though in these it may be maintained that the treatment had not a full and fair trial; it has failed in a case in which it was tried by Mr. Moore at the Middlesex Hospital; and finally, it failed, according to Mr. Fergusson, in the hands of one of the house-surgeons of King's College Hospital. This last case occurred three or four years ago, and therefore this house-surgeon, whose name we do not know, must have the credit of having anticipated Mr. Hart. The two successful cases are as follows:

1. *Mr. Hart's Case.*—J. S—, æt. 41, consulted Mr. Hart in September, 1858, for a popliteal aneurism in the right ham. It was globular, of the size of a small apple, and situated at the lower and outer part of the popliteal space. It had a full beat, but was not very near the surface. Placing the patient on the sofa, and baring the leg, in order to make a careful examination of the tumour, Mr. Hart found that its pulsation was affected by the angle at which the leg was bent upon the thigh, and that when very complete flexion was effected its thrill almost wholly ceased. Concluding that in this position the course of the blood through the tumour was greatly retarded, he conceived the hope of effecting the cure of the aneurism by the deposition of active clots, if the leg could be retained for a sufficient length of time in the

bent position. After a week's preliminary rest, treatment was commenced by bandaging the leg from the foot to the knee (not covering the tumour), thoroughly flexing the leg on the thigh, and retaining it in that position by the application of a stout roller. He was a thin, wiry man, and the flexion produced no inconvenience to him at the time. He passed a better night than during the previous week, when severe pain had been present in the aneurismal sac. What pain or annoyance was complained of during the treatment was referred to the knee-cap, but it was very trifling, and "barely deserving to be called pain." The tumour was examined on the morning of the third day (about forty hours after flexion was enforced), and considerable solidification had occurred. On the fifth day the tumour was hard and solid, and neither pulsation nor thrill could be detected. The leg was lightly attached to the thigh at a right angle. On the seventh day, the patient was allowed to move about, the foot being slung. On the twelfth day, the leg was completely straightened, and the patient walked on it with ease, limping from stiffness at the knee-joint consequent upon confinement. Six weeks subsequently the tumour was hard and firm, and much smaller. After three months it was barely perceptible, and there was pulsation in that part of the artery.

2. *Mr. Shaw's Case.*—The patient, æt. 30, first perceived a pulsating tumour in the left ham a week before his admission into the Middlesex Hospital. It was of the size of a lemon, occupied the centre of the popliteal space; was easily compressed; the pulsation was strong, and there were other signs of its being a recent aneurism. On December 1st, the knee was secured in the bent position by a band brought round the foot and thigh, and fixed near the hip. The immediate effect of the flexion was, that the patient ceased to feel the beating of the tumour, and that on inserting the oiled finger into the flexure behind the knee no pulsation could be discerned. On the fourth day, when the limb was unbound, the tumour was found to have lost about a third of its original size; its walls were thicker and denser, the force of the pulsation was considerably diminished, and the sac had receded more deeply into the popliteal cavity. Gradual improvement continued to take place. Between the third and fourth week from the commencement of the treatment the sac had become greatly reduced in size; its walls appeared nearly solid, and the pulsation was so faint that it was expected at each day's visit to find it extinct. The treatment was varied by occasionally undoing the strap which confined the knee for several hours together; but, owing to the stiffness caused by the long continuance of the flexion, the position of the joint was not much altered by the relaxation. It was not till the thirty-eighth day that the pulsation in the tumour altogether ceased. The sac was at that time about the size of a walnut. The patient gradually recovered the power of extending the joint. On the fiftieth day he could walk with only a slight halt, and on the fifty-sixth day he was discharged. During the first ten days the patient complained of the pain, as well as the irksomeness, of keeping his knee constantly bent; and for a slight swelling of the joint a lead lotion was applied. Afterwards he made light of the inconvenience, and he never at any time asked to have the belt relaxed.

On the Contagiousness of Secondary Syphilis. By M. Gibert, and others. ('Comptes Rendus,' May 24th and 31st, 1859.)

Medical men have long been divided in opinion upon the contagiousness and non-contagiousness of secondary syphilis. Clinical

facts and experimental researches not a few have convinced the majority of the contagiousness of this affection; but these facts and researches have failed to carry conviction to the minds of a large party, of which Ricord is the leader. Of this party the dogma was that no syphilitic affection was contagious unless it was inoculable, and that secondary syphilis was not contagious because it was not inoculable. It is but just to M. Ricord, however, to state that he is not entirely responsible for the most positive rendering of this dogma, and that he himself always maintained a cautious reserve upon the subject. What he held was that the primary chancre was alone inoculable in a person already suffering from syphilis. It is to be remembered, also, that in experimenting upon the contagiousness of secondary syphilis, he had never ventured to inoculate *healthy* individuals, and that he never distinctly asserted that inoculation would give negative results in such cases. Be this as it may, however, M. Ricord has abandoned his doctrine as to the non-contagiousness of constitutional syphilis, and the change in his opinion has been thus brought about.

On the 25th of October, 1858, a letter was addressed to the Imperial Academy of Medicine at Paris, by the Minister of Commerce, Agriculture, and Public Works, requesting an authoritative answer upon two questions: first, whether constitutional syphilis was contagious; and, secondly, whether, as regards contagion, there was a difference between constitutional syphilis as seen in infants at the breast and in adults. This latter led to the appointment of a commission consisting of MM. Velpeau, Ricord, Devergie, Depaul, and Gibert, and these commissioners have reported (and their report has been adopted by the Academy without opposition of any kind)—first, that some of the manifestations of secondary syphilis, especially condylomata, are undoubtedly contagious; and, secondly, that there is no reason to suppose that the case is different in infants at the breast and in adults.

The commissioners arrive at this conclusion after examining the clinical facts and experimental researches already on record, and after four experiments of their own, which were undertaken with great reluctance on their part. The persons experimented upon were all suffering from lupus, but free from any syphilitic taint, and these were chosen from the notion that the treatment for syphilis, if the inoculation took effect, might possibly be of service in remedying the lupus. The cases are given in detail, and as the results were very similar in the four, one will serve as an example.

On a man, whose face had been affected with lupus from childhood, a raw surface was made on the left arm by strong ammonia, and to this was applied a piece of lint soaked in purulent matter obtained from a condyloma near the anus of a person who had had a chancre fifteen months previously. The condyloma was of fifteen days' standing. Fourteen days afterwards there was slight redness at the seat of inoculation. Four days later still, a prominent coppery-coloured papule made its appearance in the same part. On the twenty-second day this papule was much larger, and there was a slight oozing from its surface. During the week following this

oozing, after being purulent, dried up into a thin scab. On the twenty-ninth day a gland in the corresponding axilla became enlarged. On the fifty-fifth day, the papule on the arm had become a real tubercle, with some slight ulceration in the centre, and several blotches and coppery papules had made their appearance on the trunk. During the week following, these papules became multiplied on the body, and they spread also to the extremities; many of them also changed into pustules of acne. Two or three days later the patient was put under treatment for syphilis, and in six weeks, at the date of the report, there was still much to be done in the way of a cure.

In addition to asserting the contagiousness of secondary syphilis, the reporters have also arrived at the conclusion that there are characteristic grounds of distinction between the primary and secondary affection, but here M. Ricord is somewhat at issue with his colleagues. The conclusions arrived at, indeed, are similar to those already arrived at —that the period of incubation in the secondary affection is from eighteen to twenty days, or even longer, and that the result is first a papule and then a tubercle, which is finally converted into an ulcer covered with a crust.

Be this as it may, however, the question of the contagiousness of secondary syphilis would seem to be set at rest, for if the evidence in the affirmative had not been thoroughly conclusive, it is certain that M. Ricord would not have read his recantation.

III

REPORT ON MIDWIFERY.

On Cranioclasm. By Dr. Simpson, Professor of Midwifery in the University of Edinburgh. ('Edinburgh Medical Journal,' July, 1859.)

At a recent meeting of the Obstetrical Society of Edinburgh, Dr. Simpson laid before the society some casts and preparations of the heads of infants whose delivery had been effected by means of a new variety of craniotomy, which he proposed to call *cranioclasm.* The peculiarity of the new operation was the fracturing of the base of the fœtal skull behind the foramen magnum, and at other points; and this Dr. Simpson had found it perfectly possible to effect when a proper pair of forceps were employed, although many high authorities had declared it impossible, under any circumstances, to diminish the size of the base of the cranium. The advantages of the operation were chiefly these: 1st. By breaking up the base of the skull, diminution of the head of the child was produced at its firmest and most unyielding part, and that to such a degree as to render the passage of the head through the contracted maternal canals as easy as the transit of the shoulders or pelvis of the infant. 2d. The necessity of breaking up the vault of the cranium into small pieces and removing the fragments was obviated; and thus at once the practitioner was saved much time and trouble, and the patient was freed from the danger of laceration which attends the removal of the sharp pieces of bone. 3d. As the bones of the fœtal head, remaining in their normal relation, could be more easily kept covered and protected by the soft parts, the mother ran less risk of injury during the extraction of the head. And 4th. The extraction of the head was further facilitated by the firm hold which could be obtained with the extracting forceps. The operation was performed by perforating the skull in the usual manner, and afterwards applying a pair of duckbill forceps to the skull—one blade inside the cavity, the other on the surface, so as to grasp the occipital bone close up to the foramen magnum, where, by a slightly twisting movement, the bone was fractured. By applying the forceps deeply, in the same manner, over the bones at the sides

and front of the skull, fracture of the basis could likewise be produced at those points. The forceps hitherto employed in this operation was a craniotomy forceps with serrated blades; and all that was required was, that they should be free at the joint, of such a curve as to admit of their easy adaptation to the head, and with the inner surface of the outer blade strongly bevelled or hollowed, so as to enable the smaller and convex inner blade to sink into it, and thus take a very firm hold of the included portion of the cranium. As a matter of convenience, the joint should be made moveable, and yet firmly fitting, so as to act like a scissor-joint. The operation had now been performed in three cases, all of which were illustrated in the casts and preparations before the society. 1st. There were two casts of the head of the first child that had been delivered in this manner. One of the casts represented the head in its collapsed condition; the other was taken from the same head after it had been stuffed out and restored nearly to its normal dimensions; and on comparing the two, it would be seen that the head had been diminished to the extent of about two inches in all its longest diameters. 2d. There was a preparation of the second child that had been delivered in the manner described; and in this case the operation had been performed in the lying-in hospital by Dr. Keiller in Dr. Simpson's presence. By handling the head, the members of the society could feel to what an extent the base of the skull had here been broken down. 3d. There were two casts of the skull of a third fœtus which had been delivered by cranioclasm—one showing it crushed and collapsed, the other showing it in its natural form and size. A preparation of the skull of this fœtus was also laid before the society, which could be easily seen to be fractured at the base in several places, viz., behind the foramen magnum, between the frontal and sphenoid bones, and between the temporal bones and the basilar process of the occiput.

Is the usual treatment of Post-partum Hæmorrhage correct? By Dr. Lyall, of Newburgh. ('Edinburgh Medical Journal,' July, 1859.)

"Amid the thousand and one expedients for the arrest of post-partum uterine hæmorrhage, there are," says Dr. Lyall, "a few of universal acceptation—taught in the schools, prescribed in didactic works, and employed in all emergencies demanding special interference. These seem to constitute a portion of the broad, beaten tract of the obstetric course, from which no one may think for a moment of turning aside, or even of entertaining a doubt that he walks in the right way. It will readily suggest itself to the minds of every one, that I here allude to the mechanical irritation of the uterus to induce it to contract, and the removal of clots from its interior, so as to get it to contract upon itself. In this practice was I instructed, and in this faith for many years practised; and the instruction and practice are, in a great measure, now what they were when I was a pupil, thirty years ago.

"Let us take a case, and go over the ordinary mode of procedure. After the removal of the placenta, which, perhaps, has been somewhat

tedious, the uterus contracts at longer intervals and more feebly than usual; at each contraction a quantity of blood is thrown out; the uterus is grasped through the external walls of the abdomen, and urged, by frictions and pinchings, to contract and expel its contents, which are now found gradually to increase; these means failing, and the woman getting more and more prostrate, cold water is dashed over the belly, the hand introduced within the cavity of the uterus, and the clots removed. Brandy and opium are prescribed; still the uterus fails to contract so as to prevent hæmorrhage, sinking continues till, pulseless and exsanguined, the woman dies. This consummation I have never witnessed, and trust I never may; but all preceding the final issue has been to me a matter of experience; the grievous discomfort of the patient lying in a plash of cold water, and the scarcely less grievous anxiety of the attendant watching and waiting on.

"Such is the usual course of a fatal case of post-partum hæmorrhage, and the most common means employed in its treatment; the chief object in view being to get the uterus to contract upon itself, so as to arrest the vital flow. Many other means out of the thousand and one to which I have alluded are, no doubt, often used—galvanism, squeezing a lemon within the cavity of the uterus, blowing up a caoutchouc or common bladder within it, &c., one or other of which has preceded a recovery,—'post hoc ergo propter hoc,' the steeple preceding the sands. The indication of cure is, no doubt, a right indication, as the contraction of the uterus is the means employed by nature to arrest the hæmorrhage loss; and it is usually because nature fails in the performance of this natural act, that we are called on to interfere. But do we act aright in the mode of our interference? If the uterus act feebly, and fail to contract favorably, so as to stop up the uterine vessels, will we aid its feeble powers by excessive stimulation or irritation? We know that the stimulation of other organs in a weakened or feeble condition may soon exhaust, but cannot invigorate, them; and why may the uterus be an exception to the ordinary physiological rule? Moreover, are we right in removing the clot from the interior of the organ? The uterus has been powerful enough by its contractions on the child to expel it; and will it now contract more powerfully on nothing than on a contained clot? All muscular fibres, we know, by contraction lose power—that is, the more they are shortened by action, the less power they have to continue shortening by continued action; and why may the uterus be an exception to the ordinary rule. These questions, and questions such as these, I put to myself, but failed to answer them favorably to the ordinary practice; and thus it came about that my mode of procedure changed. I do not feel anxious although the uterus contain a clot, and have long ceased to vex the organ by external and internal manipulation. Is this or the usual practice right?

"If we consider the ordinary and natural mode of arrest of hæmorrhage, we find that the blood coagulates within and around the mouths of the bleeding vessels, and that this coagulation is promoted by the sickness and fainting induced by the loss of blood; the very loss of blood, in fact, is a chief means employed by nature in arresting its further flow. In epistaxis, for instance, the bleeding nostril gets

plugged up with a clot, which in time restrains the further flow; and in ordinary wounds, unless an arterial trunk of considerable size be injured, the same thing takes place. In epistaxis, we do not sedulously remove the clot, but rather aid its formation by plugging the nostrils, and diminish, if need be, the vis a tergo by venesection, and thus imitate Nature in her conservative efforts to check the hæmorrhage. Why our practice in uterine hæmorrhage should be different I cannot see. The organ, having failed to secure its own vessels by its customary contraction, adopts the mode of coagulation to effect the same purpose; and we, forsooth, wiser than Nature, would compel her back again into her forsaken course, and say to the uterus—You shall cease to bleed by contraction, and contraction alone; a coagulum is not to be formed, or, if formed, must be removed; but removed at last once too often, the organ and its possessor fail in the contest, and cease to strive for ever. While thus condemning the 'meddlesome midwifery' of intra- and extra-uterine manipulation for the arrest of uterine hæmorrhage, in which the very life-blood of the patient is squeezed out of her by these ill-considered efforts, the casualty is by no means one for non-interference; something must be done, and that quickly; but let it be in accordance with the principles and the rules of art. When, in surgery, we fail to reach and ligature a bleeding vessel, our next resource is pressure; and as we cannot tie the vessels of the uterus, pressure is our chief and remaining stay. At the risk of apparent egotism, I shall go over the mode of procedure I usually adopt, both for the prevention and arrest of uterine hæmorrhage. As soon as the placenta is withdrawn, I place the patient on her back, put her hand over the uterus, and cause her to keep it there until I have drawn a bolster-slip or similar bandage underneath her: feeling for the uterus, I lay over it a folded flannel petticoat, or other large compress, and fix it in its place with the circular roller as tightly as it can well be drawn; a very considerable pressure is thus applied to the uterus from the first, as the compress should be sufficiently large to make the antero-posterior equal at least to the lateral diameter. If hæmorrhage do take place, the bandage is still further tightened, and the compress enlarged; and if there be escape to any extent of blood per vaginam, then the long bandage is also applied. The patient is kept supine and motionless, so as to promote coagulation and repress cardiac action. I permit no shifting of clothes, or indeed anything demanding motion or likely to excite arterial activity; as pressure and quiet I conceive to be quite adequate to prevent a fatal issue in uterine hæmorrhage, if properly and timeously applied."

On Vesico-vaginal Fistula; illustrating a new mode of operation. By J. Baker Brown, Esq., F.R.C.S. ('Lancet,' 10th Dec., 1859).

Mr. Brown's name is inseparably connected with the cure of vesico-vaginal fistula. No surgeon in this country has had so wide an experience, or such ample success, for, including the cases now

related, Mr. Brown has placed upon record twenty-six cases in which this distressing lesion has been completely cured. In the present paper seven new cases are related, a new mode of operating is described, and the latest views of the author upon different points connected with the operation are given. Of the cases we need say but little. In the first case two operations were required, in the second four, in the third three, in the fourth, fifth, and seventh one. The case ending in death was of a very unfavorable character, the age fifty-six, the fistula of very large size, the injury existing for upwards of twenty years, the health in an unsatisfactory condition. A good deal of blood was lost during the operation, death resulted from exhaustion a fortnight later, and after death the parts operated upon were found to be in an unhealthy condition, and inclined to slough. About the new mode of operating, and about his last views upon different points connected with the operation (to both of which we wish to direct especial attention), we leave Mr. Brown to speak for himself.

I. *Of the position of the patient during the operation.*—"Three positions have been recommended: on the hands and knees, as advised by Dr. Bozeman; in the semi-prone position, as suggested by Simms; in the lithotomy position, as recommended by myself. I am still of opinion that this latter position is the best, both for the patient whilst under the influence of chloroform, and for the surgeon, who can sit down quietly before the patient, during the operation; whereas on the hands and knees the patient cannot take chloroform, and the surgeon must stand in a very awkward posture during a long and tedious operation, which becomes exceedingly fatiguing. Of the semi-prone position I have had no experience, nor have I yet seen the necessity for its adoption. It must still be recollected that, whilst advocating the lithotomy position, there will be found some cases where, from pecularity of the position of the lesion or of the female organs themselves, it may be advisable not to administer chloroform, and where the opening can be better seen and reached on the hands and knees than in the lithotomy position."

II. *The modes of operating.*—"Four classes or modes may be mentioned: (*a*) by simple suture, as recommended by Heyward; (*b*) by metallic sutures, as practised by Gossett in 1834, and more fully placed before the profession by Simms, of New York; (*c*) metallic sutures guarded by clamps, as recommended by Simms, or by button, as suggested by Bozeman; (*d*) a plan which I now desire to recommend, namely, metallic sutures with a separate bar clamp to each suture. The suture may be either of silver wire or galvanized iron wire, as prepared by Cocker Brothers, of Sheffield, under the direction and suggestions of my friend Dr. Aveling. The first three plans have been fully elaborated by the gentlemen whom I have mentioned, and do not require any further observations here; I will therefore only dwell, and that briefly, on the fourth plan.

"Having placed the patient in the lithotomy position, I commence paring the edges of the opening, using for this purpose the three knives represented in fig. 1. As there has been some misapprehension

about my claim as the originator of these knives, I may here state that they were designed by myself without communication with any person whatever, and publicly used and recommended long before my friend Dr. Bozeman came to this country. During one of the many discussions he and I had upon plastic surgery, I showed him these knives, as affording great facilities for denuding the edges of the fistula; when he, in his own quiet manner, opened his instrument-case and took out three knives precisely similar to mine, which were made in Montgomery (U.S.) under his own designs, and under his own immediate eye. It will be thus seen that we both felt the necessity for, and had made, the same kind of instruments, without communication with each other.

Fig. 1.

"The edges being pared, I now pass the needle as practised by Simpson, and then though it either the silver or galvanized iron suture. Having thus passed as many sutures as may be necessary, I take the two ends of the first suture, and pass them through the eyelet-hole of the simple bar clamp (fig. 2), which it will be seen, is slightly curved, and with a nipple projecting from its back. I then hold the two ends of the wire with my left hand, and seizing the nipple of the clamp with a pair of long forceps, pass it back until I see that the edges of the fistula are in perfect contact. I then firmly squeeze the nipple (fig. 3). This has the

Fig. 2.

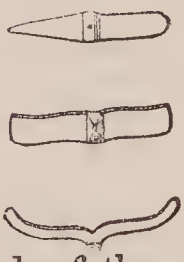
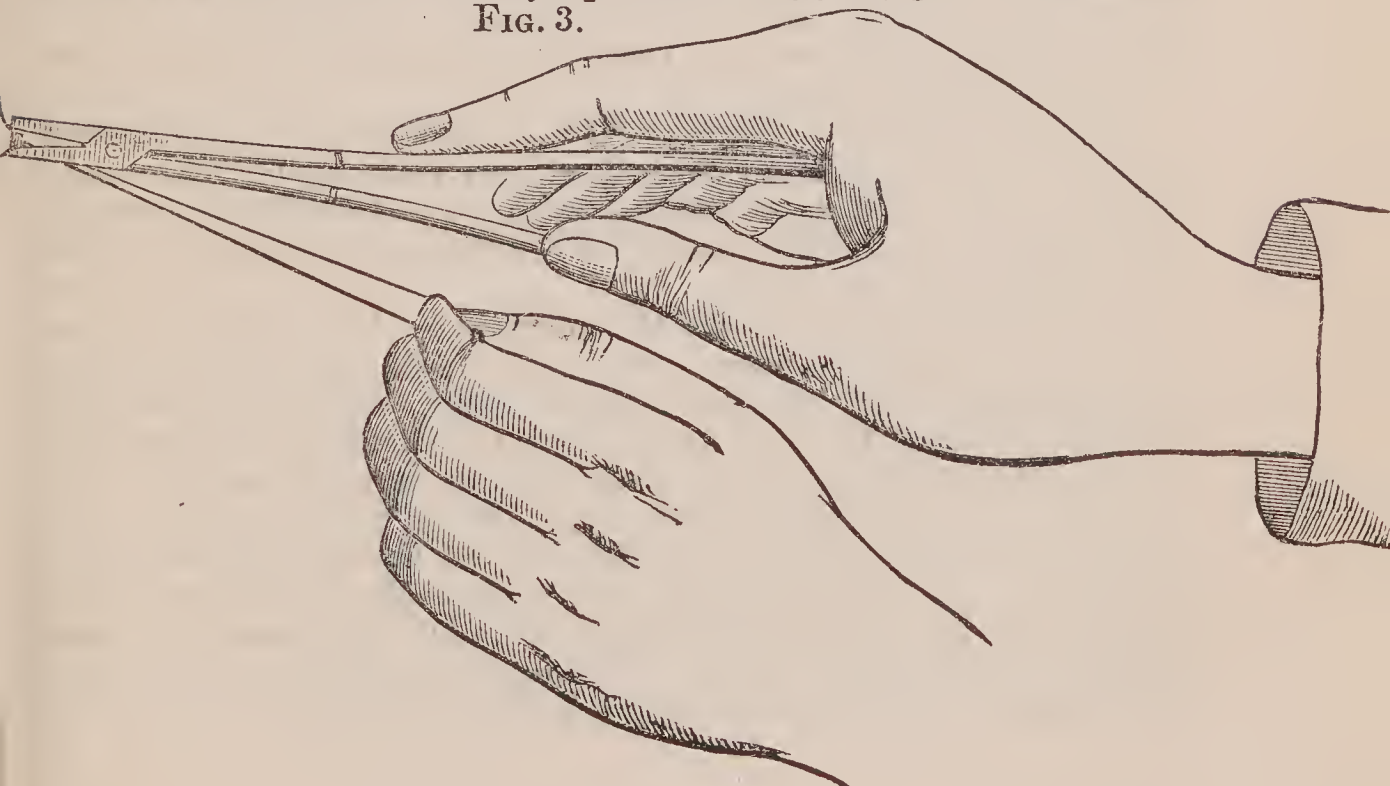
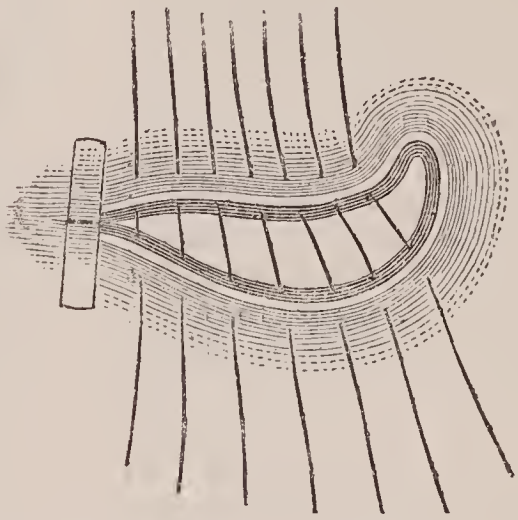


Fig. 3.



effect of partially straightening the clamp and securing the wires (fig. 4). Each suture is treated in same way, until all are closed.

Fig. 4.



"The advantages of this plan are manifold:

"1. Its celerity as compared with others.

"2. The certainty that the edges are in perfect apposition all along the fistula.

"3. That, however irregular the opening, you can follow its tortuosity without the slightest difficulty.

"4. Should the opening be very large, the edges are kept perfectly together, whilst the vagina is not stretched out, as it would be under the large button. Each suture is also well guarded by the clamp, and there is no trouble in removing them. Simply the anterior side of each suture is cut, under the clamp, and then this, being seized by a pair of forceps, and slight traction made upon it, is easily withdrawn.

"By this mode of operating, I have succeeded in completing the operation, in slight cases, within a quarter of an hour; and within three quarters of an hour in the worst cases. Formerly, such cases took two or three hours; and I have heard Bozeman and Simpson say even a much longer time."

III. *The causes of the lesion.*—"I here repeat that, in almost every case, this lesion has taken place from very protracted labour; and I cannot too strongly urge upon the profession to abolish the practice of waiting days and nights with the head pressing upon the bladder and soft parts generally."

IV. *Causes of failure after the operation.*—"It may arise from not carefully denuding the edges; from not introducing the needle deep enough through the tissues; from not being sufficiently careful in bringing together the edges of the fistula; from neglect in the position of the patient afterwards (this position should be upon the side); from neglecting to keep the bladder empty, either by the catheter being left in the bladder, or by its very frequent use. Occasionally the general health may be so much impaired as to predispose the patient to pyæmia, or to prevent healthy plastic matter being thrown out sufficiently soon to ensure union. It is necessary, therefore, to attend to the general health of the patient before operating. Another not

unfrequent cause of failure arises from a certain indurated condition of the parts, which is induced by frequent operations, especially cauterization. The parts become almost cartilaginous, and are unable to throw out plastic matter. Such a case has come under my notice, where three fistulæ existed; two of these were easily cured, but the third has defied all attempts at present from this cause."

V. *The after-treatment.*—"On the free use of opium and generous diet, and strict attention to the bladder, depend the success of the operation, however well performed in the first instance."

IV.

REPORT ON PHYSIOLOGY.

On a new function of the Placenta. By M. Claude Bernard. ('Journal de Physiologie,' No. 5, 1859.)

In this paper M. Bernard wishes to show that the placenta and amnios possess a glycogenic function which compensates for the absence of this function in the liver during the first months of uterine life. This function he believes to be exercised by glandular or epithelial cells of a transitory character, which cells are either dispersed through the vascular portion of the placenta, or else (as in the ruminants) arranged separately in epithelium-like patches upon the amnios. These cells, which are illustrated by drawings, abound in the earliest periods of fœtal life, and for some time they go on increasing in size and number. At first they are transparent; afterwards they become opaque, particularly near their borders; and often numbers of them together will give the appearance of a patch of lichen. In form they are infinitely varied—flattened, filiform, fused together in various ways, or else separate. The glucogenic matter is easily recognised at all times, both by the microscope and by the iodine test. It may also be easily obtained in quantity and in an isolated form. In water it dissolves, forming a milky solution, and from this solution it is precipitated by alcohol or acetic acid. Iodine gives with it an intense red-wine-like colour, which disappears on heating and reappears on cooling. Even while in the cells iodine reacts with it in this manner. And like the analogous matter obtained from the liver, it readily changes into dextrine and into fermentiscible sugar under the action of yeast, or when boiled with strong acids. In a word, the glucogenous matter of the placenta and amnios is in every particular like the glucogenous matter of the liver.

M. Bernard has further noticed that the glycogenic cells of the placenta and amnios continue to increase until the liver begins to give signs of the exercise of its glucogenic function, and that from this time they begin to fall away, becoming yellow as they do this, or else exhibiting signs of fatty degeneration.

It is certainly not a little curious, as M. Bernard points out, to see around the embryo of animals a shadow of that accumulation of amyloid matter which is so conspicuous a phenomenon around the embryo of plants.

On Glycogene as a condition of the development of certain fœtal tissues before the appearance of the Glycogenic function of the Liver. By Dr. Claude Bernard. ('Journal de Physiologie,' April, 1854.)

In the paper noticed in the previous article, Professor Claude

Bernard attempts to show that the placenta and amnios exercise a glycogenic function before this function is transferred to its sole permanent location in the liver. In the present paper he goes a step further, and points out that several embryonic tissues have a share in the function which he thought at first to belong exclusively to the placenta and amnios. The glycogene in all these cases is absolutely the same as that which is obtained from the liver. The fœtuses were furnished by calves, rabbits, pigs, dogs, cats, &c. A few human fœtuses were also experimented on.

In all these cases Professor Claude Bernard found glycogene infiltrated in the skin and in the cells of epithelium covering the skin; in horns, hoofs, claws; in the mucous covering of the mouth, tongue, pharynx, stomach, small intestine, and in several portions of the large intestine; and also in the mucous covering of the respiratory and genito-urinary passages. He also found it, though in a somewhat modified form, in the muscles. On the other hand, except in the epithelium of the ducts, he failed to find it in the kidneys, pancreas, salivary glands, lymphatic glands, liver, or any other form of glandular structure. He also failed to find it in nervous and osseous textures. In all these cases where the glycogene was found the embryo was very young. At a later period, as the glycogene became localised in the liver it disappeared from other parts, until at the time of birth there was scarcely a trace anywhere but in the liver.

In a note, however, Professor Bernard admits that there are two structures which, even in the adult, may, under certain circumstances, be infiltrated with glycogenous matter. These are the muscles and the lungs. This is particularly the case in hybernating animals during hybernation, when also the liver is particularly loaded with the same matter. In this case the glycogene disappears, except from the liver, when the animal wakes and begins to breathe more actively and move about. Glycogene may also be detected in the muscles of many animals if they are kept in a state of forced quiet, but not when they are allowed to move about. And for the same reason, it occurs in considerable quantity in the muscles of a limb which has been paralysed by dividing its nerve.

Professor Bernard does not seem to think that these facts invalidate his views respecting the glycogenic function of the liver, but he offers no very clear comment respecting them. He merely hints that in the animal embryo, as in the vegetable embryo, saccharine and amylaceous substances would seem to play an important part in the process of early development.

On Amyloid Substances as component parts of Animal Bodies, and on their uses. By Dr. Charles Rouget. ('Journal de Physiologie,' Nos. 5 and 6, 1859.)

According to Dr. Rouget, amylaceous substances are as much a necessary element in the animal economy as protein compounds and fatty bodies. Amylaceous substances, in different conditions, are

common in some of those rudimentary forms of animal life which skirt the confines of the vegetable world. They are common in the tissues of the higher animals while in an embryonic condition. They are met with not only in the liver and in the placenta and amnios, but also in the epithelium of the uterus, vagina, and tongue. In all these cases the red-wine like reaction with iodine is precisely the same as that which is furnished by the glycogenic cells of the liver, placenta, and amnios. According to Dr. Rouget, sugar, instead of being a special secretion of the liver, or of the placenta and amnios before the liver can act, must take rank with urea, creatinine, creatine, &c., as a product of natural waste—a product of the natural waste of the amylaceous element of the organic fabric; or rather it must be looked upon as a result of the waste of a depraved organism, and be placed by the side of uric acid, lactic acid, inosite, &c.

These papers of Dr. Rouget are of considerable importance, and we entirely sympathise in their spirit. There is, no doubt, an inseparable connexion between the animal and vegetable kingdom, and it is not at all likely that amylaceous substances, which play so important a part in the vegetable economy, have nothing to do in animal organisms, and this the more, seeing that these substances, in cases of animals having a mixed diet, form so large a portion of every-day food. We sympathise, also, with the view which would refer sugar to a disordered natural metamorphosis of the amylaceous constituents of the body, rather than to a secretive action in certain hepatic or placental cells. At the same time we must admit that as yet the facts are not altogether conclusive.

On the origin of Sugar in the Animal Economy. By M. Sanson. ('Journ. de Physiologie,' Jan., 1859.)

M. Sanson considers that one principal reason for the partial failure of his experiments before the Commission of the Academy of Science at Paris (*v.* 'Abstract,' XXIX, p. 334), is to be found in the fact that these experiments were made upon butcher's meat, in which the animal had been killed by loss of blood. His original experiments were made upon the flesh of animals dying of disease, killed by dividing the medulla oblongata, &c.—upon flesh, that is to say, from which the blood had not been drained away; and on repeating the experiments with flesh of this kind the results, he tells us, are precisely the same. Now, as M. Sanson holds that the dextrine is to be met with chiefly in the blood, we are quite disposed to agree with him in thinking that it was scarcely fair to test the correctness of his views by experiments upon the flesh of animals from which the blood had been carefully extracted.

Preservation of the faculty of Singing in a person otherwise demented. By Dr. Mitchell. ('North American Medico-Chirurgical Review,' May, 1858.)

On the 27th of January, 1858, Dr. Mitchell exhibited before the Pathological Society of Philadelphia, a specimen of chronic inflamma-

tion and softening of the gray matter of the cerebral convolutions in a child thirteen years of age. The subject from which this specimen was taken was one of fifteen children, born within a period of sixteen years—the mother having twice had twins.

J. D—, when five years of age, was a handsome, intelligent child. At this time he began to see dimly, and at last became entirely blind, from what was believed to be amaurosis. When nearly blind, he began to show a loss of power to fix his attention, and at length, within six years, became completely idiotic. One year ago he was attacked with epileptic fits, which succeeded one another at less and less intervals, until they destroyed his life. Paralysis of the left side, and violent convulsions of the right side, preceded his dissolution. During his idiocy he retained the power of singing, and sang several songs very well, even a few days before he died. He also retained the ability to learn new music, although he mumbled the accompanying words, and evidently attached to them no definite meaning. All other mental effort seemed impossible. His temper was peevish and sullen, and a more pitiable object can scarcely be conceived of.

On post-mortem dissection the following appearances were observed : Head well developed; body and limbs thin; large ulcer (bed-sore) on the sacrum. On opening the head, adhesions existed along the line of the great longitudinal sinus, closely glueing the membranes together; the deposits were of comparatively recent origin. A large amount of serum was found within the membranes, and the brain, compressed and shrunken, did not fill the cranium. With this exception, the upper surface of the organ was healthy, although the membranes were more than usually vascular. Below the middle line of the brain, and principally in the middle and posterior cerebral lobes, were many spots where the surface was a little flattened. On cutting into these, the knife passed through a layer of gray cerebral matter which adhered to the membranes, and then entered a cavity whose walls were ill defined. This cavity was thus bounded on all sides by gray matter, and followed the irregular curves of the convolutions. It contained altered blood-discs, brain-cells, fragments of nerve-tubercles, nuclei, compound granular masses, cholesterin-plates, and quantities of granular matter, with occasional fragments of pigment. On careful inspection, the external gray matter of the cerebral convolutions offered, nearly everywhere, some stage of the process whose completed results we have just described. The first stage seemed to be a red line of inflammation just within the external limits of the vesicular neurine. In the later periods of change, this appearance was lost in the complete destruction of tissue which followed. No cause was found to account for the early amaurosis, and an examination of the retina was denied. The child died, therefore, from chronic peripheral encephalitis with extensive serous effusion.

On the influence of the Nervous System on Nutrition. By Dr. E. Brown-Sequard and Dr. Charcot. ('Journal de Physiologie,' January, 1859.)

M. Brown-Séquard points out in this paper the different effects arising from the compression or division of a nerve, or of a nervous centre like the spinal cord, and from these differences he argues that the nervous system is capable of exerting a marked influence upon nutrition. After complete division of a nerve the only effect is wasting, often slow wasting, of the paralysed parts. In some cases, it is true, where a limb has been paralysed by division of its nerve, there has been inflammation, ulceration, or gangrene of the foot; but these effects Dr. Brown-Séquard shows to be due, not, as Dr. Schroeder van der Kolk supposes, to the absence of innervation, but simply to the prolonged friction of the insensible part against the hard ground. This is evident, for all these injuries may be prevented by wrapping up the paralysed part in cotton-wool or hay. When, on the other hand, a nerve is compressed, the effects are very different. To show this a case is cited from Mr. Paget's able work on 'Surgical Pathology.' This case is that of a man, under Mr. Hilton's care in Guy's Hospital, whose median nerve was compressed by the callus which had been formed for the repair of a fracture at the inferior extremity of his radius, and who was teased by obstinate ulcers upon the thumb and the two adjoining fingers. These ulcers resisted all modes of treatment until it occurred to Mr. Hilton to relieve the nerve from the pressure of the callus by flexing the wrist, and then they healed rapidly. What the end of the case was is not stated, but we are told that the ulcers returned when the nerve became subjected to the old pressure in consequence of the man beginning to use his hand. Another case mentioned by the author is that of a farmer, under the case of Dr. Charles Rouget, who had received a gun-shot wound in the inner side of the left arm. The great vessels and nerves were exposed and considerably injured, but the wound healed without any difficulty. Two months later an eruption of an herpetic character made its appearance on a part of the forearm which had been deprived of sensibility by the injury which its nerves had received in the upper arm at the time of the accident, and this eruption was strictly limited to this part.

The difference between the effects of irritation and cessation of nervous action on the part of the spinal cord, Dr. Brown-Séquard thinks, is illustrated in many cases of disease as well as in experiments upon the lower animals; and arguing from the latter, the probability is that there is a far greater disposition to ulceration, gangrene, &c., in parts which are left in connexion with a compressed or irritated cord, than in parts from which the influence of the cord has been completely cut off.

The cases related by Dr. Charcot are further instances of the disturbances of nutrition resulting from irritation of the nerves going to the part.

Case 1.—R. C—, æt. 42, No. 24, Salle St. Benjamin, Hôpital de la Pitié, of strong constitution, and previously enjoying good health. In 1852 he had a phlegmonous abscess on the dorsal aspect of the left forearm, for which several free incisions were found to be necessary. A short time afterwards he was sensible of loss of power in this arm, particularly in the hand. At the same time there were tingling, pricking, and dulled sensibility in the same parts, with occasional sharp pangs of a neuralgic character which seemed to spring from the cicatrix. A few months later, sensibility had completely disappeared, the atrophy in the hand and forearm were much more marked, the fingers were contracted, and an eruption like pemphigus had made its appearance on the dorsal aspect of the hand and fingers. This eruption appeared without any inflammatory or painful symptoms, the bullæ had no areolæ, and the ulcers to which they led had generally healed in from fifteen to twenty days. As the eruption subsided in one part it rose in another, and the usual means of treatment have little or no influence over its course. In all other respects the patient is in good health.

Case 2.—A man, æt. 43, Salle St. Charles, Hôpital Laborisière, July, 1857; his malady being very obstinate sciatica of the left thigh. This was the second seizure, the first being about a year ago. Fifteen or twenty days after the present seizure, the skin of the lower part of the affected thigh became covered with groups of confluent herpes, and there appeared to be much reason to connect the eruption and the pain with irritation in the nerve. The eruption, however, disappeared several weeks before the pain.

Case 3.—A man, a patient of Dr. Rayer, wounded in the Revolution of June, 1849, by a musket-ball, in the inferior and posterior part of the right thigh. The wound healed without difficulty, but some time afterwards pains of a violent character made their appearance in the neighbourhood—pains shooting also to the leg and foot. Accompanying the pains, also, were frequent eruptions of an herpetic character in the most painful parts. The pains and the eruption were alike uninfluenced by treatment.

On Vascular Dilatation under Nervous Action. By Professor Claude Bernard. ('Journal de Physiologie,' No. 4, Oct., 1858.)

In Professor Bernard's investigations on the changes in the colour of venous blood, a fact has been brought to light which at first sight would seem to show that it may be the office of some nerves to produce a *dilated state* of the blood-vessels. In a former volume (XXVII, p. 323) we have seen that venous blood proceeding from a glandular organ undergoes certain remarkable changes in colour during secretion. During rest, the colour is quite dark; during secretion, if the process be carried on briskly, the colour may be indistinguishable from that of arterial blood. We have seen, also, that with respect to blood proceeding from muscle, the case is quite different, the dark colour being rendered perceptibly darker during muscular action. In investigating the causes of these remarkable changes in colour, the experiments of M. Bernard were performed for the most part upon the submaxillary glands of dogs, and it is these experiments which have led to the discovery of the fact to which we wish to direct attention.

The submaxillary gland is supplied with nerves from two distinct sources. It is supplied by a twig from the lingual nerve. It is sup-

plied also by nerves from the grand sympathetic—chiefly from the superior cervical ganglion—which nerves accompany the arteries of the gland. These nerves are quite distinct, they may be acted upon separately, and the results of their action are strangely dissimilar. If, the twig from the lingual remaining intact, the nerves of the sympathetic system be divided, the venous blood proceeding from the gland loses its dark colour and becomes permanently red; if, on the other hand, the sympathetic nerves being let alone, the twig from the lingual be divided, the blood in the veins becomes permanently black. Corresponding changes, moreover, are produced by simple irritation without any previous division of the nerves, the blood for the time becoming red if the twig of the lingual be irritated, and black if the sympathetic filaments be so treated. Or if both classes of nerves be divided at the same time, the same results may be produced by irritating in turn the ends of the nerves in connexion with the gland.

These changes in the colour of the blood are to be explained, according to M. Bernard, by the different action of the nerves upon the vessels of the submaxillary gland. The action of the sympathetic nerve is to produce contraction, and so diminish the stream of blood in the vessels—a change which allows more time for the performance of those reactions which issue in the discoloration of the red arterial blood. Hence the venous blood proceeding from the submaxillary gland is black when the sympathetic nerves of the gland are irritated. The opposite effects produced by irritating the twig of the lingual are not so easily explained. At first, M. Bernard was disposed to think that this irritation resulted in active *dilatation* of the vessels of the gland, and that in this way the arterial blood was able to get through the capillaries into the veins without losing its proper arterial colour—the blood, that is to say, escaping those reactions in the capillaries which destroy the arterial redness. A later explanation is that the action of the twig of the lingual is not upon the muscular coats of the vessels, but upon the sympathetic nerves belonging to these coats—the idea being that the action of the lingual is to suspend the action of the sympathetic, and so paralyse the vascular coats. In this case, therefore, the increased capacity of the vessels is produced, not by the active dilatation of their coats, but by the opposite state of passive relaxation. Be the explanation what it may, however, there is no doubt that the effect of irritating the twig of the lingual is to produce dilatation in the vessels of the submaxillary gland; for this is seen not only in the redness of the blood which finds its way into the veins, but also in the fact that there is a distinct arterial pulse in these veins, and that the blood escapes in jets if a vein be wounded at this time.

Some facts showing that the Iris moves under the direct action of light upon its proper tissues. By Dr. E. Brown-Sequard. ('Journal de Physiologie,' April, 1859.)

The experiments referred to in this paper were made during the winter of 1846, upon the eyes of eels and red frogs. In one experi-

ment, the eyes were removed from the animal and set aside for three or four days—until, indeed, the retina had obviously begun to pass into a state of decomposition. Then, while in this state, the iris was exposed to the sun, or to the light of a candle, as the case might be. The result was marked contraction of the pupil. In another experiment, the posterior half of the eyeball was removed, and the anterior half, containing the iris, alone subjected to the action of light. The result was still the same—the iris contracting when the rays of light fell upon it. In the third experiment, a ray of light, passed through a small hole in a piece of metal or card-board, was directed first through the pupil upon the retina without touching the iris; and secondly, upon the iris directly. The result was now more marked than before, for while contraction was still produced when the light was directed upon the iris, no contraction was produced when the light was directed through the pupil upon the retina without touching the iris.

On the rhythmic movements of the Diaphragm and other muscles of Animal Life after their separation from the Nervous Centres. By Dr. E. Brown-Sequard. ('Journal de Physiologie,' January, 1859.)

In 1848 Dr. Brown-Séquard ascertained that there are rhythmic movements in the muscles of the chest, trunk, limbs, face, &c., after they have been cut off from the cerebro-spinal centres by the division of their nerves. These movements are most marked in the diaphragm, where indeed they are in every respect comparable to the movements in the auricles and ventricles of the heart. They affect the entire diaphragm and the individual fibres of the organ, for so long ago as in 1842 and 1844 Remak and Valentin had seen rhythmic movement in microscopic portions of muscle taken from the diaphragm of a rabbit, pig, and cat. Usually the rhythm of the diaphragm corresponds to that of the thoracic respiratory muscles.

The rhythmic movements of the muscles of a limb are seen most easily in connexion with the phenomena of asphyxia. Paralyse one of the limbs by dividing its nerves, then suffocate the animal by putting a ligature on its windpipe, and presently the whole animal, with the exception of the paralysed limb, is seized with convulsion. In three or four minutes these convulsions are at an end, and all that is noticed is a little trembling in the non-paralysed parts. All this while the paralysed limb has exhibited neither convulsion nor tremor; then, when the rest of the muscular system is comparatively or entirely still, the paralysed limb becomes the seat of various movements, more or less marked, more or less general; and if these movements are examined carefully, many of them are seen to be of a regular rhythmic character. Dr. Brown-Séquard thinks that some of the post-mortem contractions of cholera, yellow fever, &c., are of this character.

The rhythmic movements of the muscles of the face may be seen on the side on which the facial nerve has been divided or plucked out.

They continue for a varying time, and, as a rule, they are greatly exaggerated by any interruption of the respiratory movements.

Reflecting on these facts, and on others of a like nature, Dr. E. Brown-Séquard thinks, very properly, that we ought not to seek the cause of the rhythmic movement of the heart in the heart specially, bnt in some law affecting all muscles alike, and he believes that the carbonic acid of the venous blood will be found to be the special exciting cause of these movements whenever they occur.

Curious case of Rhythmical Contraction in a Voluntary Muscle. By M. Jobert (de Lamballe). ('Gaz. Hébd. de Méd. et Chir.,' No. 17, 1859.)

The muscle affected in this case was the peroneus brevis on the right side. On a level with the malleolus, and at its posterior border, a regular pulsation could be felt, accompanied by a momentary lifting up of the soft parts, and followed by a dry sound at the close of each muscular contraction. This sound could be heard at some distance, and equally whether the patient was standing or lying, awake or asleep. The sound was produced, apparently, by the falling back of the displaced tendon into its bony channel, the displacement having been previously occasioned by the contraction of the muscle. M. Jobert says, that by a little practice any one may acquire the power of making comparatively loud noises by flicking the tendon of the peroneus brevis in and out of its groove, and he suggests that noises thus made would be for some persons "spiritual knockings." In the patient in question, it may be added, the affected muscle had been the seat of these rhythmical contractions for six years.

On the Reparative Process in Human Tendons after subcutaneous division. By W. Adams, Esq., Surgeon to the Royal Orthopædic Hospital. ('Proc. of the R. Med. and Chir. Society,' June 28, 1859.)

At the meeting of the Royal Medical and Chirurgical Society at which this paper was read, specimens of reunited tendons, after division, were exhibited from ten cases, and also drawings, made by Ford, of the recent appearances in thirteen cases, at periods between four days and three years after the operations. These specimens had been collected by Mr. Adams during the last eight years, and were principally from patients operated upon at the Royal Orthopædic Hospital; but, for two specimens, he was indebted to Mr. Erichsen and Mr. Curling.

After alluding to our at present scanty information on this subject, and describing the recent appearances in fifteen cases, the author gives a general summary of the reparative process, describing—

1st. The immediate results of the operation.

2d. The commencement and nature of the reparative process.

3d. The general appearance and structure of the newly formed connective tissue, or new tendon; and

4th. The junction of the new with the old tendon.

This is followed by an account of the circumstances which may interfere with the perfection of the reparative process, or entirely prevent it, so that non-union of the divided tendon may result. Complete failure of union had been witnessed by the author only in the posterior tibial tendon; but it appeared that there is considerable risk of such an occurrence whenever tendons are divided in, or near to, dense tubular sheaths. It is shown that imperfect union might result either from some constitutional defect in the reparative powers of the patient; or from injudicious after-treatment in a variety of ways, but principally from too early and too rapid mechanical extension.

The conclusions which the author considers are established by the above series of cases, ars arranged under nine different heads. It is stated that tendon is one of the few structures of the body capable of reproduction or regeneration, and that the newly formed tissue acquires within a few months of its formation the structural characters of the old tendon so perfectly, that, under the microscope, it is with difficulty distinguished from it, but it does not acquire through its substance the uniformly opaque pearly lustre of old tendon; in the mass it retains a grayish translucent appearance, so that the recent section affords an easy method of distinguishing the new from the old tendon. The greatest length of perfectly formed new tendon which the author has seen was two inches and a quarter, and this was in the tendo Achillis of an adult a year and a half after it had been divided by Mr. Curling.

That the process by which new tendon is formed is essentially similar in animals and man.

That the perfection of the reparative process is in direct proportion to the absence of extravasated blood, and inflammatory exudation; and that the sheath of the tendons, when consisting of loose-textured areolar tissue, as in the tendo Achillis, and other tendons surrounded by soft tissue, is of importance—1st, in preserving a connexion between the divided extremities of the tendon; 2dly, in furnishing the matrix in which the nucleated blastemous, or proper reparative material, is effused; and 3dly, in giving definition and form to the newly developed tendinous tissue.

That the new tendon always remains as a permanent tissue, and as an integral portion of the tendon, the divided extremities of which it has been formed to re-unite. In the specimen exhibited, in which Mr. Adams had divided the tendo Achillis three years previous to death, an inch and a quarter of new tendon was clearly traceable. The average length of new tendon formed in children to re-unite the divided extremities of the tendo Achillis, Mr. Adams considers to be from half an inch to an inch; and in adults, from one to two inches.

The author considers that the facts adduced in this paper are amply sufficient to disprove the *linear-cicatrix theory*—the theory at present in vogue and supported by all his colleagues—which assumes that the newly formed tendinous structure has a disposition to undergo a process of gradual contraction, such as we see taking place in the cicatrices of the skin after burns, to which it has been compared; and

that ultimately it becomes absorbed: the muscular structure at the same time becoming elongated by the force of the contraction of the cicatrix, so as to allow of the re-approximation of the ends of the divided tendon, and the formation of a *linear cicatrix*.

From the present observations it appears, that in the cure of deformities, muscles are elongated by the increased length of their tendons, obtained by means of subcutaneous division, and the development of new tendon formed for the purpose of re-uniting the divided extremities of the old tendon.

The mechanical and physiological effects of this increased length of the tendons are described; and lastly, the author states, that when re-contraction of the foot takes place, and the deformity returns at a distant period after tenotomy, this does not depend upon absorption of the new material, or new tendinous tissue formed previously to unite the divided extremities of the old tendon, but upon structural alterations taking place in the muscular tissue. In three cases of relapsed deformity of the foot examined by the author, the new tendinous tissue formed after the previous operations remained, and could be easily distinguished from the old tendon. These facts are regarded as additional evidence against the *linear-cicatrix theory*.

On the Fœtus in Utero as inoculating the Mother with the peculiarities of the Father. By Dr. Alexander Harvey, late Physician to the Aberdeen Royal Infirmary. ('Glasgow Medical Journal,' January, 1859.)

Dr. Harvey's object in this paper is to show that secondary or constitutional syphilis may be transmitted through the fœtus from the father to the mother, and in order to this he advances many valuable considerations of a pathological character. His argument rests, however, chiefly upon certain physiological facts which are not sufficiently remembered, and to which we are glad to call attention.

The general fact on which Dr. Harvey rests his theory of inoculation is this—that the peculiarities of a male animal that has once had fruitful intercourse with a female, of the class *mammalia*, may be more or less clearly discernible in the progeny which that female may subsequently have by other males; or, in other words, that a male animal that has once had intercourse with a mammalian female may so influence her future offspring begotten by other males, as, in a greater or less extent, to engraft upon them his own distinctive features and his own constitutional qualities; his influence thus reaching to the subsequent progeny, in whose conception he himself has had no share, and his image and superscription, so to speak, being more or less legibly inscribed upon them. Accordingly, if the female be of a *different* breed or species from that male, and have thus borne a cross or hybrid by him, her future offspring, got by males of the *same* breed and species with herself, may yet have more or less the characters of a cross or hybrid.

"This general fact," writes Dr. Harvey, "was not unknown to the great Haller. It was known even to Becker, who lived long before

Haller; both these writers stating, that when a mare has had a mule by an ass, and afterwards a foal by a horse, the foal exhibits traces of the ass.

"It was not, however, till the publication in the 'Philosophical Transactions' for the year 1821, of the cases of Lord Morton's mare, and of Mr. Giles' sow, that the subject attracted any particular attention. A young chestnut mare, seven eighths Arabian, was covered in 1815 by a quagga—a species of wild ass from Africa, and marked somewhat after the manner of the zebra. The mare was covered but once by the quagga, and, after a pregnancy of eleven months and four days, gave birth to a hybrid, which took strongly after the quagga. Subsequently, in 1817, 1818, and 1821, this mare was served by a very fine black Arabian horse, and produced successively three foals, all of which bore unequivocal marks of the quagga; the first, however, in a higher degree than the third. Again, a sow, of the black and white breed (known as Mr. Western's breed), became pregnant by a boar of the wild breed, of a deep chestnut colour. The pigs produced were duly mixed, the colour of the boar being in some of them very prominent. The sow being afterwards put to a boar of the same breed as her own, some of the produce were observed to be stained or marked with the chestnut colour that prevailed in the former litter. And on a subsequent occasion, the boar being still of the same breed as the sow, some of the litter were also slightly marked with the chestnut colour. What adds to the value of the fact now stated is, that, in the course of many years' observation, the breed in question was *never* known to produce progeny having the slightest tinge of the chestnut colour.

"These two cases were long looked upon as solitary examples of an exceptional phenomenon, for the reference made by Haller and Becker to a precisely analogous case had come to be forgotten; and the phenomenon exemplified by them was long regarded as scarcely, if at all, admitting of a plausible explanation. By some, however, it was suggested that it might be ascribed to a partial fecundation by the quagga and chestnut boar, respectively, of others of the mare's and sow's ova than those actually impregnated by them; or at least to some influence of their seminal fluid on the ova that remained, of a permanent kind, but strictly *local* in its agency, and modifying in some way the development of these ova, when afterwards impregnated by other males. By others, again, the phenomenon was regarded as an instance of that class which come within the category of 'mothers' marks,' and are popularly ascribed to the agency of the imagination or of the mind on the body, and supposed to be illustrated by a reference to the case recorded in Genesis (chap. xxx), of Jacob and his peeled rods. Neither the phenomenon itself, however, nor these conjectures regarding it, gave rise to much discussion, or long continued to engage the attention of physiologists.

"Meanwhile, instances of a like kind were becoming known to persons engaged in the breeding of horses, cattle, sheep, dogs, and swine; and in 1849 Mr. M'Gillivray adduced, in the paper I have referred to, a collection of cases sufficiently large to show, that the

phenomenon exemplified in Lord Morton's mare, or rather in her progeny, is by no means so unique as it was thought to be. And it may now be confidently affirmed, that since then, and within these few years, enough has transpired in this department of inquiry to warrant the presumption, that the phenomenon in question is so uniform in its occurrence, whenever the requisite conditions obtain, as to constitute a general fact or law of nature. It is so regarded by a large number of our great breeders of cattle, by dog-fanciers, and others of large experience in the rearing of horses, sheep, &c., and is habitually taken into account by them in the selection of their breeding-stock, and in their estimate of the purity of an animal's blood; the *practical* belief of all of them on this subject being, that a female animal that has once been impregnated by a male of a different breed or species from her own, and has borne a cross or a hybrid by him, is thereby *destroyed*, for a time at least, if not permanently, for the purposes of breeding *pure* stock of her own kind; and the *theoretical* belief of many among them, that this result happens because (as was first suggested by Mr. M'Gillivray) the blood of the female has, through the fœtus, been *contaminated* by the blood, and charged with the qualities of the male she first had intercourse with—so charged therewith, so contaminated thereby, that she herself imparts the blood and the qualities of this male to the progeny she afterwards has by other males.

"It is not my intention to lay before you any additional examples of this kind as occurring in the lower animals. I have elsewhere brought together a tolerably large collection, and to this it must suffice to refer. But I cannot forbear just briefly alluding to the fact, for the mention of which you will be quite prepared, and the reference to which will naturally pave the way to our proper subject—that instances of the like sort are, perhaps, equally common in our own species. It has long been known—and it is, in fact, a popular observation—that, in the case of a woman twice married, and fruitful by both husbands, the children of the second marriage often resemble their mother's first husband or his family, and that not in features only, but in mind also, and in disposition. It is obvious, indeed, that in any such case, where all the individuals concerned—the woman, her children, and both the husbands—are of the *same* variety of the human family, the alleged resemblance must often be exceedingly difficult to trace or to substantiate. But it is equally obvious, that means exist for ascertaining clearly whether it obtains or not. There are equally distinct varieties of the human species as there are of any of the lower animals; and all that is requisite for bringing the question to a decisive issue is, to observe accurately whether the children of European parents—when the mother has, in the first instance, had offspring by a negro—exhibit traces of the latter in the colour of the skin, and still more in the quality of the hair, the form of the features, &c.; or, contrariwise, whether the children of negro parents, when the mother had formerly been impregnated by a European, manifest the peculiarities of the latter.

"Of the former case, I have heard of two instances as occurring in this country, one of them under the notice of Professor Simpson of

Edinburgh: A young woman, born of white parents, but whose mother had some time before her marriage had a bastard child (a mulatto) by a negro man-servant in Edinburgh, presented distinct traces of the negro. Of the latter case, that in which the parents are both negroes, but in which the mother has previously had fruitful connection with a European, Dr. Robert Balfour, of Surinam, wrote me some years ago to say, that repeated instances of the European influence under such circumstances, had come under his own observation.* Doubtless, if looked for, examples of the influence now in question would be found as general in our own species as in the lower animals. And it may just be observed that, in the one as in the other, they can only be unequivocally and satisfactorily determined in cases where the individuals or the animals that are the subjects of observation are of a different race or species; or rather, where the male, the female, and the offspring, are of the same breed and species, but the female has first of all been impregnated by a male of a different breed or species."

On Sympathy between the Tonsils and the Ovaries. By Dr. M. Prosser James, of Braintree. ('Med. Times and Gazette,' 3d September, 1859.)

In the course of his practice, Dr. James has met with several cases of tonsillitis accompanied by ovarian suffering, and he thinks that many similar cases may have been overlooked in consequence of the attention being too exclusively occupied by the throat-symptoms. And this is certainly not at all improbable, for the ovarian pain often extends into the lumbar region, and coalesces, so to speak, with the "back-ache" of the pyrexia incident to the tonsillitis. A more searching scrutiny, Dr. James thinks, would elicit the fact, previously unmentioned through female modesty, that pain in the inguinal region was as distressing as pain in the back, perhaps more so. One case is given in illustration, and this is as follows:

Case.—On the evening of February 23d I was requested to prescribe for a single young lady, 22 years of age, of sanguine temperament and robust health, who, through imprudent exposure to damp, was reported to have caught a severe cold. On the 21st she was quite well, but yesterday was seized with rigor, followed by intense headache, sneezing, and some coryza. To-day, therefore, may date as the second day of the disease, and she now feels quite unable to remain up from excessive lassitude, headache, and pain in the back and limbs; in fact, she declares she "aches all over." She is thirsty, her skin hot and dry, pulse 90, tongue coated, fauces injected, and

* "Among the coloured population" (Dr. Balfour writes me, April 19, 1851), "consisting of negroes and their offspring by Europeans, the most striking illustrations of the truth of your or Mr. M'Gillivray's theory are constantly occurring. Shortly after my settlement here, I was led to remark the circumstance (which I had never noticed recorded by writers), that if a negress had a child or children by a white, and afterwards fruitful intercourse with a negro, the latter offspring had generally a lighter colour than the parents. . . . . I could particularise many such, the observation of which had led me to form an opinion similar to that which you have more elaborately worked out."

bowels rather confined. I prescribed a diaphoretic anodyne, to be followed by a saline aperient in the morning.

3d day.—The medicine procured some sleep, but she feels no better. Headache somewhat relieved, but is still confused; throat seems dry and sore, and voice somewhat hoarse. On inspection, the whole fauces are much injected, and the tonsils swollen. Pain in the back and limbs exceedingly distressing; thirst and heat of the skin continue; pulse 95; the tongue remains coated; bowels open once since the draught.

Towards evening she got worse, the fever being considerably increased, and she is very nervous and excited. The catamenia appeared to-day—one day before she expected—and were attended with great pain; never suffered such pain with a period before. Several doses of a saline diaphoretic have been given during the day.

4th day.—Tonsils swollen to a great extent, and tender to the touch, but no indication that an abscess has formed. Several minute superficial ulcers on the anterior part of the left tonsil were touched with nitrate of silver. She can swallow nothing but a little cold water.

5th day.—The nitrate was freely applied to the left tonsil, on which two specks remained visible. Respiration more impeded; pulse 100. Tongue more thickly coated with dirty white fur; bowels open once. An attempt to swallow a little thin arrowroot gave much pain, and some returned through the nose. A few grains of nitrate of potass mixed with sugar, to be put on the tongue in fine powder at intervals of three or four hours, so as to dissolve slowly, and come in contact with the throat.

6th day.—All specks have disappeared during the night, and the left tonsil seems somewhat less; at any rate the right is by far the larger. Has had no sleep and is very excited and anxious. Respiration much impeded; pulse 120 and weaker; has taken no food; tongue getting brown; bowels not open. Catamenia are passing off, but there is a fixed, dull, aching pain in the right ovarian region, aggravated on motion. This was discovered from her dread of moving, on account of the pain in the back, which, on careful questioning, she said seemed to "come right through" to the groin, and when she moved almost made her sick. She lay a little inclined to the left side, with the right leg so drawn up as to take off pressure. On examination the pain is found localized to the ovarian region, which is hot and tender; very gentle, but prolonged manipulation detected a somewhat oval swelling in which the pain was seated. Slight percussion in this spot was intolerable; but at a short distance could easily be borne, and detected a loaded state of the bowel.

The right tonsil (the larger and on the same side as the affected ovary) was freely scarified; and swallowing being so painful, a powder of calomel and morphia was placed on the tongue, and a black draught advised to be taken as early as she feels able. In the mean time poppy fomentations to the groin.

7th day.—Better. The scarified tonsil much less, so that the draught was taken with less difficulty. The bowels have been thrice freely relieved; but the operation of the medicines the first time greatly increased the ovarian pain, which then amounted to agony. This I attributed to the contact of hardened fæces with the ovary. The pain and tenderness are now much diminished. She is much calmer; pulse 100; respiration easier; tongue covered with thin white fur; urine depositing sediment; has taken some arrowroot and jelly.

8th day.—The right tonsil continues decreasing; but the left has as rapidly enlarged. The ovarian pain is also gone, but only to reappear in exactly the

same form on the opposite side. She is more excited, has lost her little appetite again, her throat feels more sore, is intensely thirsty, with a burning hot skin, has severe pain in the back continuing into the left groin and occasionally down the thigh; feels sick; tongue coated and brown; pulse 130 and weak; "has been wandering a little." Cold water and ices were gratefully taken. Free scarification of the left tonsil; a brisk purge, and warm flannels to the groin were employed with the same benefit as before. In the evening she expressed herself much better, and wanted to have the scarification repeated. She was far more composed, but still apprehensive and low-spirited. Had taken by persuasion a little beef-tea. The bowels being quite free, a full dose of morphia was ordered.

9th day.—Slept nearly four hours. Disinclined to swallow anything from the extreme soreness of the throat; but having no repugnance to food, was persuaded to take some beef-tea. The tonsils are exceedingly tender, superficially, as if from the scarification, but are much less. The ovarian pain continues, but is duller in character. Respiration easy; pulse 100; tongue cleaner; a saline aperient to be followed by an opiate; hop pillows to the groin.

10th day.—Better altogether; more cheerful; tongue clean; urine depositing sediment; pulse 95; complains of pain in shoulder; a dose of calomel and Dover's powder prescribed.

11th day.—During the night the ovarian pain became suddenly worse, and she was nauseated, and at the worst vomited. Still feels sick; pulse 95; weaker; effervescing draughts, with one minim of dilute prussic acid in each, to be given at intervals of two or three hours.

12th day.—Much better in every respect; the sickness has left; the throat feels less sore; the pain in the groin is duller; she got up to-day.

From this time she gradually improved; the pain in the groin soon disappeared; and the tonsils slowly diminished under iodide of potassium, tonics, generous diet, and change of air.

A Reptile living without food for twenty-eight months. By Dr. Riddell. ('New Orleans Med. and Surg. Journ,' Jan., 1858; and 'Journ. de Physiologie,' Jan., 1859.)

The reptile here referred to was an *Amphiuma Tridactylum*, weighing from four to five pounds, and measuring about three feet. It was kept in a narrow jar partially filled with the muddy water of the Mississippi, which water was changed occasionally, and for twenty-eight months it was left entirely without food. At the end of this time the animal is said to have been very active, but unfortunately no note was taken of its condition as to weight. Dr. Riddell says that he has known of rattle-snakes living eighteen months without food.

Post-mortem appearances in the Body of an Executed Criminal. By Dr. H. G. Clark, of Boston. ('Transactions of Boston Society for Medical Improvement;' and 'Edinburgh Medical Journal,' August, 1859.)

The prisoner, Magee, was a healthy and very muscular man, but of small stature, and weighing about 130 pounds. Æt. 28. He was executed in the rotunda of the jail, at ten o'clock, June 25th, 1858. He was dropped a distance of from seven to eight feet. There was not the least perceptible struggle or convulsion, but the urine was passed immediately. At the end of seven minutes, all the sounds of the heart were distinctly audible, and the number of beats 100 in the minute. At nine minutes the number was 98. At the end of twelve minutes, the number was 60 and the pulsations fainter. At fourteen minutes the sounds had ceased.

The body was lowered at twenty-five minutes past ten, at which time a careful examination of the chest revealed no perceptible sound or impulse of the heart. A small space under the left ear seemed to have escaped active compression, so that some circulation might have been continued through the carotid and jugular of that side.

The face was purple, and the pupils dilated, but there was no protrusion either of the eyes or tongue. The cord had taken just above the thyroid cartilage, and had left a deep oblique wale or indenture along its whole course, excepting at the part before mentioned; the knot, which was over the mastoid, having lifted it off from this point.

At 10·40 the cord, and the straps with which he had been pinioned, were removed. After this, the body, the face especially, became gradually paler.

At a few minutes past eleven, Dr. Ellis commenced the autopsy, at the House of Reception. The body was pale, and the skin mottled. A small ecchymosis was noticed just above the line of the cord on the right side. The right sterno-cleido muscle was ruptured through one half of its thickness. No lesion was discovered in any of the other soft parts of the neck. The os hyoides was somewhat broken, but the spine was entirely uninjured. Dr. Shaw examined the clothing, to determine the presence of semen, but none was found.

At 11·30, a slight but regular pulsatory movement was observed in the right subclavian vein. Upon applying the ear to the chest, this was ascertained to proceed from the heart itself, which gave a distinct and regular *single* beat, with a slight impulse, 80 times in a minute. The chest was then opened, and the heart exposed, without in any way arresting the pulsatory movements. The right auricle was in full and regular motion, contracting and dilating with beautiful distinctness and energy. At twelve o'clock, the spinal cord having been previously divided, the number of contractions was 40 per minute, having continued, with only a short intermission, regularly up to this time. Dr. Ellis furnishes the notes of his own and Mr. Towers' minutes after this hour.

"The peculiar movements of the anterior wall of the right auricle

gradually but occasionally recurred, either spontaneously or excited by a passing current of air, until 1·45 o'clock. They could at any moment be excited by the point of the scalpel. Dr. Ellis being obliged to leave at this time, the remainder of the record concerning the heart was furnished by Mr. Tower, one of the medical house pupils of the hospital. It is as follows:

"At 1·45 the movements still continued without stimulus. Five were noticed in a minute, with corresponding intervals. At 2·45 all automatic movements ceased, but the part still responded to the stimulus of the knife. At 3·10, deep irritation of the same kind was followed by slight movements. The irritability was most marked at the lower part, where the venæ cavæ enter the auricle. At 3·18 all movements ceased. On opening the heart, it was found to be perfectly normal. The left ventricle was contracted; the right, not. No coagula were found."

Brain healthy.

Both lungs collapsed completely, and were in every respect normal.

The liver and spleen were darker coloured than usual, owing to the presence of an unusual amount of blood.

The stomach contained a whitish pulp, like softened bread. The mucous membrane had a pinkish tinge, particularly in the neighbourhood of the pylorus. In the large extremity, for some distance below the cardiac orifice, were numerous whitish glandulæ, about a line in diameter.

The upper part of the small intestine contained much green, bilious fluid. The mucous membrane was of a pinkish colour. Peyer's patches were very distinct. No lacteals were seen.

The other organs were examined and found healthy.

Dr. Jackson asked if any motion of the intestines was observed, to which Dr. Ellis replied in the negative. Dr. J. alluded to the case of a tumour removed from the shoulder, some fibres of muscle attached to which contracted under the stimulus of the knife, some time after its removal. He then alluded to the muscular contractions which were manifest after death in many cases of cholera, during the epidemic of 1833.

The absence of cerebral congestion Dr. Gay thought probably due to the adjustment of the rope, which allowed circulation in the left carotid. He thought death might have been owing to the sudden shock.

Dr. Clark alluded to the three modes in which death takes place by hanging—viz., apoplexy, asphyxia, and fracture of the spine, and attributed death in the present instance to asphyxia.

Dr. Ainsworth remarked that all the appearances usually observed in cases of hanging were here wanting, and thought that the first effect of the sudden fall was a powerful concussion of the brain, which paralysed the body—as in cases where a blow or fall is received upon the extremity of the sacrum—and that death occurred afterwards from strangulation.

Dr. H. Bigelow considered the motions of the heart to be solely due to local irritability.

Dr. Coale, in this connexion, alluded to the unfortunate incident in the life of the celebrated Vesalius, in consequence of which he was banished from his country and died in exile. Not allowing a sufficient time to elapse after the death of his patient before proceeding to the examination, the muscular irritability remaining in the body caused a pulsatory movement in the heart, which led to his arrest and punishment for murder and impiety.

Dr. Clark expressed the opinion that, as there was no lesion of any important organ, resuscitation might possibly have been accomplished by artificial respiration, &c., if efforts to that end had been made immediately upon the lowering of the body from the scaffold—that is, within half an hour after he fell. Strong shocks of electricity or galvanism would, in cases of accidental apparent death, destroy the little remaining vitality; and if these agents are used at all, they should be administered with great care.

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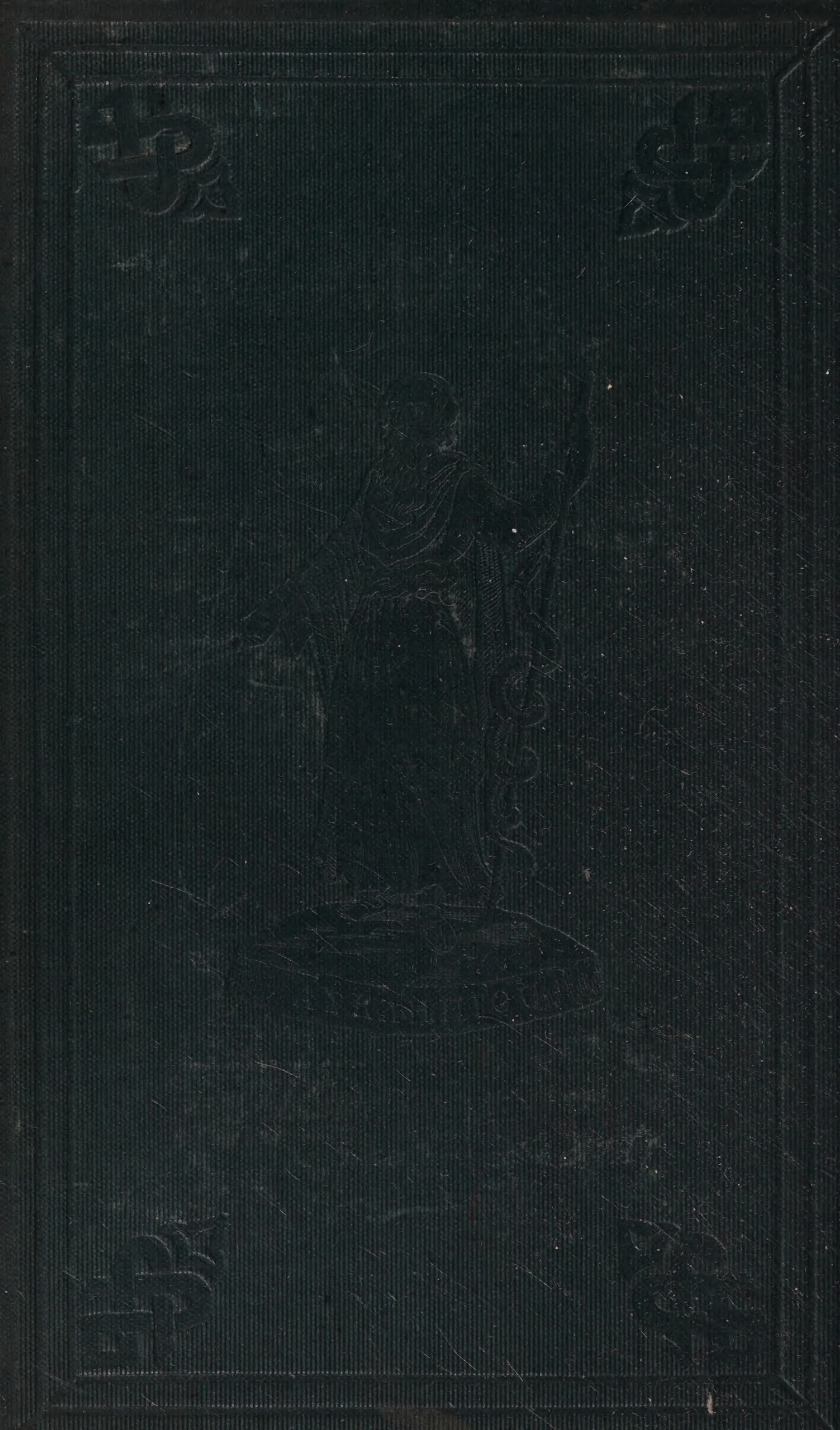
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